Limited Reevaluation Report

Boston Harbor, Massachusetts

Navigation Improvement Project

June 1996

US Army Corps
of Engineers
New England Division

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14. ABSTRACT
This report identifies changes to the authorized Boston Harbor Navigation Improvement Project that have taken place since the Feasibility report was completed in September 1988 (and the subsequent report of the Chief of Engineers dated 11 May 1989). The project was authorized for construction by the Water Resources Development Act of 1990. Project implementation has been delayed since 1989 primarily due to concerns about the dredging and disposal of contaminated (O&M) dredged material. The Feasibility Report did not identify a dredged material disposal plan because sediment testing had not been completed. This report and the Final Environmental Impact Report/Statement (FEIR/S) addresses all of the major issues that have been raised in developing an acceptable disposal plan.
Several major steps have been taken to respond to issues raised by those Federal agencies that provided comments to the report of the Chie of Engineers: Sediment testing and characterization, Ship Simulation studies, Acoustic Impedance surveys, biological studies, water quality modeling, preparation of a DEIR/S and a FEIR/S leading to selection of a dredged material disposal plan for both O&M and improvement project material.

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Boston Harbor Navigation Improvement Project
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Several major steps have been taken to respond to issues raised by those Federal agencies that provided comments to the report of the Chief of Engineers: Sediment testing and characterization, Ship Simulation studies, Acoustic Impedance surveys, biological studies, water quality modeling, preparation of a DEIR/S and a FEIR/S leading to selection of a dredged material disposal plan for both O&M and improvement project material.

Sediment Testing and Characterization

During the preparation of the Feasibility report, testing and characterization of dredged material was deferred in recognition of the development of a new national protocol. It was also decided that deferment would insure that test results would more accurately reflect the conditions at the time of testing. After receiving letters from the Department of the Interior (January 6, 1989) and the Environmental Protection Agency (January 4, 1989) in response to the Chief of Engineers Report, it was decided to accomplish sediment testing prior to initiating Preconstruction Engineering and Design (PED).

In 1990 dredged material in the project channels was evaluated in accordance with Section 103 of the Marine Protection, Research and Sanctuaries Act to determine the suitability for disposal at Massachusetts Bay Disposal Site (MBDS). Testing was performed using the procedures described in the draft national protocol ("Green Book") of January 1990 and draft regional protocol of May 1990. Generally the 1990 protocols which identified the specific physical, chemical and biological tests to be performed, were more sensitive than previously used tests making it more difficult to meet suitability requirements. Characterization followed in close coordination with EPA Region 1 resulting in a decision that all unconsolidated silt was unsuitable

for unconfined open water disposal and that all parent (improvement) material was suitable for open water disposal.

Environmental Issues

Subsequent to sediment characterization, disposal of unsuitable material became the major issue with Federal and State resource agencies. The proposed disposal of unsuitable material at the MBDS with capping using clean parent material was unacceptable to the EPA and other agencies.

Environmental Impact Report/Statement - Massport the non-Federal sponsor, initiated preparation of an Environmental Impact Report (EIR) in April 1991. NED decided in April 1992 to prepare an EIS based on cumulative impacts of Federal actions (maintenance, improvement and permit berth dredging) and to address significant public concern over the disposal of unsuitable material. The combined DEIR/S was completed in April 1994 and the FEIR/S was filed with EPA on 30 June 1995 (Federal Register). The comment period for the FEIS ended on 29 August 1995.

The FEIR/S selected plan is in-channel borrow pit disposal for unsuitable material from the channels (O&M) and berths and unconfined open water disposal at the designated MBDS for suitable material that is not allocated for beneficial use. With the exception of beneficial use by others, the disposal site for the suitable material has not changed from MBDS as proposed in the Feasibility Report.

Advisory Group - In addition to preparing an EIR, Massport formed an advisory group made up of 35 Federal and state agencies, local government, environmental groups and industry representatives. One subgroup advised on sediment testing and characterization for berth areas. Another subgroup developed disposal site screening criteria and ultimately assisted in the disposal plan selection process.

Environmental Compliance - The project has or will comply with all appropriate Federal and State and local environmental laws and regulations.

The DEIR/S discusses environmental compliance with Federal Statutes and Executive Orders, such as the Endangered Species Act, Fish and Wildlife Coordination Act, National Historic Preservation Act, Clean Air Act, Clean Water Act, and Coastal Zone Management Act, etc., in Section 5, pages 5-1 through 5-17. In addition this section details State and local environmental laws and regulations. A Clean Water Act Section 404 (b)(1) Evaluation is also included. The Corps and Massport jointly submitted an application for Water Quality Certification on 25 April 1996.

The FEIR/S describes the local, State and Federal regulations and how this project will comply with them. Section 8 discusses a draft Section 61 Findings. The Section

61 Findings is required as part of the Massachusetts Environmental Policy Act (MEPA) process.

The U.S. Fish and Wildlife Service is a cooperating agency for this EIS and has been fully involved in the development of the preferred alternative. The U.S. Fish and Wildlife Service has never determined that their August 12, 1988 FWCAR for the improvement project is inadequate. The June 17, 1994 letter from the U.S. Fish and Wildlife Service on the DEIR/S state that they are commenting in accordance with the Fish and Wildlife Coordination Act. The Corps does not obtain a FWCAR for maintenance dredging projects. The EIR/S concerns relate to the contaminated maintenance material of this project.

The DEIR/S, in Section 5, states that compliance with the Clean Air Act was realized with the release of the public notice for this project. No significant air quality impacts are expected from this dredging and disposal project, as was stated in the DEIR/S and FEIR/S. This project will occur in a large commercial harbor surrounded by downtown Boston and surrounding cities. Impacts from this project would be insignificant in comparison to background levels of air pollutants. The letter from the U.S. EPA on the DEIR/S or the FEIR/S does not indicate a concern with the Clean Air Act , or a disagreement with our determination. In addition, comments from the Commonwealth of Massachusetts do not address any concerns with air quality impacts.

State and Agency Review of EIR/S - Seventy one letters of comment on the DEIR/S were received and are included, with responses, in Volume 2 of the FEIR/S. Numerous investigations were accomplished including finfish, lobster and benthic studies at each potential disposal site and water quality modeling studies to determine impacts of dredging and disposal operations at each potential site. The advisory group was informed during each step of these studies.

Twenty comment letters were received in response to the FEIR/S. In general, the letters were positive and supported the preferred alternative. Comments and responses for Federal and State agencies are included in Attachment 1 to this report. The U.S. EPA agreed that the in-channel disposal alternative (preferred alternative) was the least damaging practicable alternative (LEDPA). The State also agreed with the preferred alternative, with some additional minor issues to be resolved. These issues will be discussed in greater detail during the permitting phase of the project. The National Marine Fisheries Service does not disagree with the preferred alternative, but would like to see additional biological sampling. The U.S. Fish and Wildlife Service believes the in-channel disposal alternative is reasonable but does not consider this alternative the LEDPA site.

Coordination with Agencies after the FEIR/S Comment Period - Further coordination with the agencies took place during the period of December 1995 through April 1996 to resolve remaining issues from the FEIR/S comment letters and to prepare the application for water quality certification and CZM consistency. Letters were requested from appropriate State agencies to indicate the likelihood of obtaining the necessary permits. The reply letters from both the Mass. Dept. of Environmental Protection (28 Dec. 1995) and the Mass. Coastal Zone Management Office (28 Dec. 1995) are included in Attachment 2-A to this report and indicated their expectation to issue the permits.

During this same period eleven issues from the FEIR/S comment letters were identified that require resolution during the permit phase of the project. Coordination with the commenting agencies resulted in letters from the agencies that give assurances that the issues have been or will be resolved in a way satisfactory to the Corps and the appropriate agencies during the permit process. A summary of the issues, the responses and letters of concurrence from the agencies are included in Attachment 2.

Future Maintenance and Disposal Issues - New England Division is committed to providing appropriate resources to address the long-term needs for the region for disposal of contaminated sediment. NED has conducted Section 22 studies to begin to identify the need and issues on this topic. We will continue to provide support, along with the Commonwealth of Massachusetts (and other states), U.S. EPA, and other appropriate agencies to address this question.

In particular, the EIR/S narrows the large list of disposal alternatives to a short tiered list of preferred disposal alternatives. The in-channel alternative is the preferred alternative for this project. The remaining disposal alternatives on the short list may be suitable for future maintenance dredged material. A NEPA document (EA or EIS) would be prepared for the disposal of future maintenance material. This would involve coordination with other agencies.

Sponsor Support

Massport has expended significant resources in the preparation of the EIR/S and related studies. Their strong support also includes participation in introducing state legislation to fund major port improvements in Massachusetts, including the funds required for the Boston Harbor Navigation Improvement Project.

Project Channel Limits

The authorized project limits have changed due to location of beneficiary berth areas and from ship simulation studies completed in December, 1992. No changes have been made to the authorized depths of the project channels except for two

areas of the Main Ship channel required for safe maneuvering. A plan of the current project is attached. The current project description follows with a summary of changes made since the Feasibility Report.

Reserved Channel - Narrow the 35-foot channel from 430 to 400 feet and 380 feet wide (at Conley Terminal), widen the channel at its confluence with the Main Ship Channel, and deepen the channel to 40 feet, except for its upper 1,340 feet which would remain at 35 feet. Deepen a portion of the 35-foot main ship channel to 40-feet opposite the Reserved Channel to provide turning area.

Ship simulation results indicated that the turning area at the mouth of the Reserved Channel proposed in the Feasibility Report may be changed to reduce rock excavation and still satisfy the recommendations of harbor pilots who participated in the simulation. These changes were incorporated. Other changes include a reduction the area to be deepened lying north of the mouth of the channel and to provide additional turning area by deepening the 35-foot Main Ship Channel to 40 feet in a small reach opposite the mouth of the Reserved Channel. Also, the channel width adjacent to the Conley Terminal berth was reduced to 380 feet to accommodate new dock construction.

Chelsea River Channel - Deepening the existing 35-foot channel to 38 feet, and Non-Federal relocation and alteration of utility crossings beneath the channel.

No changes are proposed to the authorized project. NED is coordinating with the City of Boston and USCG on their plans to replace the Chelsea Street Bridge which currently restricts vessel traffic.

Mystic River Project - Deepen the existing 35-foot channel to 40 feet, except for an area at the upstream limit along the southern shoreline where the waterfront has been converted to non-navigation dependent uses and where existing users do not require depths greater than 35 feet.

The channel length was reduced. The last upstream berth (Boston Edison) will not be deepened since this beneficiary will receive petroleum from the Exxon berth further downstream. Also, ship simulation studies resulted in a more gradual transition from the wider downstream channel to the narrower upstream channel to provide a safer turning area.

Inner Confluence Area - Deepen the 35-foot confluence of the Mystic and Chelsea Rivers to 40 feet to enable deepening of the two river channels. Deepen a portion of the 35-foot Main Ship Channel to 40-feet along the East Boston waterfront for an approach to the Inner Confluence.

Ship Simulation results indicated two changes from the Feasibility Report plan.

A small area on the east side of the confluence, outside of the current project limits, was included in the authorized project to provide for a larger turning area. Ship Simulation studies indicated that this area was not required for safe maneuvering and it was eliminated. The simulation study also indicated the need for deepening an appropriate length of the 35-foot Main Ship channel leading into the Inner Confluence to 40 feet. This change is only to allow for continuation of wide turns from the 40-foot lane of the Main Ship channel into the Mystic River.

President Roads Ship Channel - Nonstructural designation and remarking of specific Federal channel limits along the southern reach of the Roads connecting the outer confluence of the three entrance channels with the Inner Harbor Main Ship Channel, resulting in a 20% enlargement of the deepwater anchorage to about 420 acres.

No changes are proposed to the authorized project.

Dredged Material Quantities

Subsequent to the feasibility report dredged material volumes and costs were reevaluated and maintenance material was separated from the improvement material. Studies using acoustic impedance technology and subsurface borings provided a more accurate estimate of rock quantities and confirmed material types. Changes to the project channel limits and depths described above also impacted quantities. The following table summarizes the quantities:

TABLE 1
Quantities of Dredged Material for Federal Channels
(in cubic yards)

Channel	Feasibility Report		Current Project	
	Ordinary Material	Rock	Ordinary Material	Rock
Reserved Channel	438,400	39,900	600,400	34,000
Mystic R. /Inner.Confl.	1,144,800	54,000	1,289,700	54,000
Chelsea River	455,200	-	557,400	-
TOTAL	2,038,400	93,900	2,447,500	88,000

Project Costs

Tables 2 and 3 are summaries of project costs and cost sharing for the Feasibility Report plan and the current project estimate:

TABLE 2
Navigation Improvement Project Costs
(in $000)

Account	Item	Feasibility Report June 96 P.L.	Current Project June 96 P.L.	Current Project fully funded
02	Relocations	830	980	1,020
12	Navigation Ports and Harbors	28,300	24,305	25,785
30	Plng., Eng., and Design	1,770	2,190	2,220
31	Construction Mgmt.	2,000	675	775
	Aids to Navigation (USCG)	20	20	20
TOTAL PROJECT COST		$32,920	$28,170	$29,820

TABLE 3
Cost Sharing and Benefit to Cost Ratio

	Feasibility Report (June 1996 PL, 8-7/8 %)	Current Project (June 1996 PL, 7-5/8%)
Total Project	$32,900,000	$28,170,000
Federal Cost	$22,530,000	$16,820,000
Non-Federal Cost	$10,370,000	$11,350,000
Annual Benefits:		
Comm. Navigation	$4,035,000	$3,595,000
Benefit to Cost Ratio	1.6 to 1	1.5 to 1

TABLE 4
Annual Benefits and Benefit/Cost Summary

	Annual Benefits	Annual Costs	BCR	Net Annual Benefits
President Roads (non-structural)	---	---	---	---
Reserved Channel	$1,404,000	$725,000	1.94	$679,000
Mystic River & Inner Confluence	$1,511,000	$1,134,000	1.33	$377,000
Chelsea River	$679,000	$493,000	1.38	$86,000
Total Project	*$3,595,000*	*$2,352,000*	1.5	$1,243,000

* Annual costs and benefits are based on March 1995 price level. Interest Rate = 7-5/8%

Project Benefits
Several minor changes in direct project beneficiaries have taken place since the Feasibility Report which have had only minor effect on the project. All benefits are Commercial Deep-Draft category. The following table lists current beneficiaries, reevaluated and confirmed by interviews in 1995 and changes since the Feasibility Report:

Reserved Channel:
Coastal Oil New England Inc.
shipping lines using Massport's Conley Container Terminal

Boston Edison was dropped because of switch over from oil to natural gas.

Mystic River Channel:
Exxon USA, Inc.
Distrigas of New England (LNG)
Prolerized (Scrap Metal Export)
Boston Edison (Petroleum for Power Generation)
shipping lines using Massport's Moran Container Terminal

No changes from the Feasibility Report

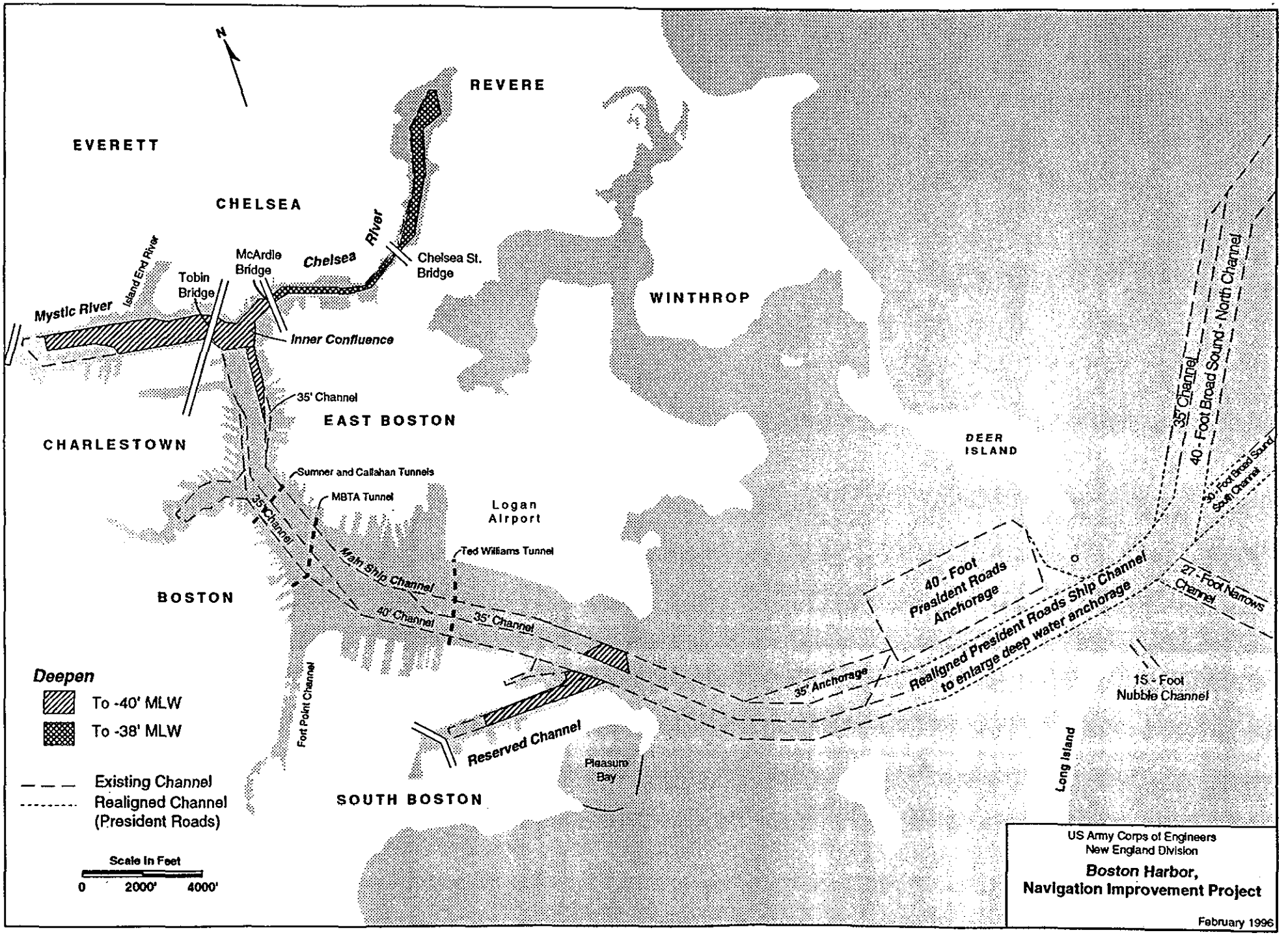
Chelsea River Channel:
Eastern Minerals
Northeast Petroleum
Gulf Oil Co.
Coastal Oil New England

Eastern Minerals was added
Mobil Oil was dropped (shift to barges)

Conclusion

Issues that have been raised concerning dredging in Boston Harbor have focused on the dredging and disposal of contaminated (O&M) material. All issues have been addressed through extensive data collection and analysis, close coordination with all interested Federal and state agencies and other through the advisory group and the formal EIR/S process.

The selected disposal plan for suitable and unsuitable material has been found acceptable to all participating Federal and State agencies and is supported by Massport.


N
REVERE
EVERETT
CHELSEA
Island End River
Mystic River
Tobin Bridge
McArdle Bridge
Chelsea River
Chelsea St. Bridge
WINTHROP
Inner Confluence
35' Channel
EAST BOSTON
CHARLESTOWN
DEER ISLAND
Sumner and Callahan Tunnels
MBTA Tunnel
Logan Airport
Ted Williams Tunnel
Main Ship Channel
40' Channel
35' Channel
BOSTON
40 - Foot President Roads Anchorage
Realigned President Roads Ship Channel to enlarge deep water anchorage
35' Anchorage
27 - Foot Narrows Channel
40 - Foot Broad Sound - North Channel
30' Foot Broad Sound South Channel
15 - Foot Nubble Channel
Fort Point Channel
Reserved Channel
Pleasure Bay
SOUTH BOSTON
Long Island
Deepen
To -40' MLW
To -38' MLW
Existing Channel
Realigned Channel (President Roads)
Scale in Feet
0 2000' 4000'
US Army Corps of Engineers
New England Division
Boston Harbor,
Navigation Improvement Project
February 1996

Attachment 1

Boston Harbor Navigation Improvement Project

Federal and State Agencies
Comments and responses from review of the Final EIR/S

Federal Agencies:

- U.S. Department of the Interior, Fish and Wildlife Service, New England Field Office, 11 August 1995

- U.S. Environmental Protection Agency, Region 1, 23 August 1995

- U.S. Department of Commerce, Office of the Under Secretary for Oceans and Atmosphere, 29 August 1995

Commonwealth of Massachusetts

- Executive Office of Environmental Affairs, (Certificate of the Secretary of Environmental Affairs), 14 September 1995

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

REF: 1992-00844

August 11, 1995

Colonel Earle C. Richardson
Division Engineer
U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254

Dear Colonel Richardson:

This is in response to your June 23, 1995 request for comments on the final environmental report (EIR/S) for the Boston Harbor Massachusetts Navigation Improvement and Berth Dredging Project. These comments are submitted in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.) and the Clean Water Act [33 U.S.C. 1344(m)].

In our June 17, 1994 letter to the New England Division, the Service identified a number of issues that needed additional study and evaluation prior to the adoption of the final selected plan. Some such as Rowes Quarry have been completed while others such as the collection of seasonal data to identify spatial and temporal uses of the aquatic sites, demonstration of the geotextile disposal technology, a full evaluation of the regulated navigation area alternative, and the development of a supplemental EIR/S are incomplete or were rejected. Additionally, some new questions have been raised as a consequence of the new information presented and/or alternatives selected as components of the final project.

During the scoping and evaluation process, the Service has consistently viewed the in-channel disposal option as a reasonable alternative for the disposal of contaminated material. Our reservations with in-channel disposal rest primarily with the additional impacts associated with dredging and disposal of material to create in-channel disposal pits, water quality effects during the projected 18-month construction period, and the degree to which the various fractions of the maintenance-type material can be dredged and contained within the disposal pits.

The water quality modeling that was conducted for the dredging and in-channel disposal option depicted total suspended solids (TSS) plumes based only on silt and clay (mineral) fractions. Organic particulate matter in its various forms was not evaluated to determined the spatial and temporal characteristics of these plumes during the dredging and disposal process. Additionally, no evaluation was conducted to determine the environmental consequences resulting when contaminants that are bound to the organic fraction become available for biological uptake while in the water column and/or at their new deposition site. The total organic carbon content of the surficial dredge material ranges from 1-9 percent with levels of 4-5 percent being commonplace. The organic fraction frequently contains a significant percentage of the total loading of toxic compounds in the dredge material. Because of the flocculent nature of this sediment fraction, we expect that it would comprise a significant portion of the sediment lost or disturbed during the dredging and disposal process. The fall velocity of organic particulate matter depicted as natural detritus on Table 2.2 of the Water Quality Modeling Report is several orders of magnitude lower than for clay or silt fractions used in the TSS modeling work. Consequently, because of this differential settling pattern, we are concerned that the organic particulate fraction with its attendant contaminant load would develop into a much larger, longer lasting plume than those depicted in figures 3.1-3.11 of the Water Quality Report. Conceivably, a large portion of the inner harbor could be affected during the 18-month construction period. Once the contaminants become suspended in the water column, they may be available for direct biological uptake or they may be redistributed to the surficial sediments at other locations in the harbor where they could become available for biological uptake. The Massachusetts Water Quality Standards (314 CMR 4.05) contain a requirement that surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife, or that interfere with the propagation of fish or shellfish or adversely affect benthic organisms. The final EIR/S does not provide an analysis of this important and complex water quality issue as herein described. The potential environmental consequences of this exposure pathway need to be evaluated.

The final EIR/S concludes that dredging and in-channel disposal would result in a clean substrate for aquatic life in the navigation channels affected by maintenance and/or improvement dredging. This conclusion by the Corps/Massport assumes that all of the contaminated sediments can be removed by the dredging process and subsequently, be contained in the in-channel disposal pits. The Service is concerned that some portion of the flocculent and/or high water content material residing in these channels will not be removed by dredging. Second, for that portion of these materials that is dredged and deposited in a barge and then subsequently dumped at an in-channel pit, we are concerned that those flocculent and/or high water content materials actually deposited in the pit will be displaced by heavier, more consolidated sediments, forcing the materials of concern back to the surface of the disposal pits and channel bottom. In effect, the so-called "mayonnaise layer" in the navigation channel would get disturbed, resuspended, and moved around during the dredging and disposal process but would still cover an undefined portion of the bottom of the navigation channel when the project is completed. Some evidence to support these concerns

can be inferred from the pilot project for disposal of PCB contaminated sediments in New Bedford Harbor. The sediments in New Bedford were dredged with hydraulic dredges and deposited in subaqueous disposal pits. When capping material was added to this high water content dredge material, mixing and displacement occurred, resulting in an ineffective containment and capping operation. In our view, the substrate conditions in the navigation channel are unlikely to be rendered free from contaminated sediments as a consequence of the dredging and disposal process, as the Corps/Massport contend. However, we do not believe that the contaminant conditions in the channel sediments will be made worse by dredging unless the deeper channel causes changes in stratification or other water column conditions.

In addition to selecting the in-channel option as the preferred disposal site alternative, the Little Mystic Channel was also selected as a contingency disposal site. Little Mystic Channel has a capacity of about 300,000 c.y., assuming 15 acres of subtidal habitat are filled to a variable intertidal elevation. While this proposal is less damaging to the aquatic system than filling to create fast land, the impacts may still be significant, given the cumulative effects of dredge and fill activities in Boston Harbor which has resulted in the loss of over 3,200 acres of intertidal and subtidal habitat and the degradation of several hundreds of acres of aquatic habitat by dredging. The limited biological studies conducted by Massport demonstrate that this subtidal habitat is utilized by finfish and lobster. The benthic community is typical of those found on intermittently stressed subtidal habitat as opportunistic, short-lived species apparently predominate. Water quality conditions are scheduled to be improved in the Little Mystic as a consequence of combined sewer overflow and other stormwater abatement measures during the next several years. Water quality and habitat suitability for aquatic life may change dramatically during or prior to the construction phase of the navigation improvement project.

Because the Little Mystic Channel is proposed to be filled to an intertidal elevation, the concerns we expressed about the flocculent and high water content sediments being displaced and forced to the surface by heavier, more consolidated material become more critical. Since these sediment fractions can be expected to contain a significant contaminant load, they would likely be available for uptake by a variety of aquatic life and wildlife. In our view, the Little Mystic Channel proposal would contribute to the significant degradation already existing in Boston Harbor first, by filling an additional 15 acres of subtidal habitat and second, by having a reasonable likelihood of creating contaminated intertidal habitat. For these reasons, we recommend that the Little Mystic channel be deleted from your project plans as a contingency site.

The funding uncertainties for the Federal improvement and maintenance dredging accounts may provide a window of opportunity for the Corps/Massport to more fully evaluate the new issues raised in this letter and those in our previous letters. If funding is not appropriated for construction in the proposed and subsequent Water Resource Development Acts, existing resources may be well spent evaluating the regulated navigation area, relocation of terminals

to the existing 40-foot channel, the use of geotextile bags, and perhaps other innovative disposal technology to dispose of contaminated sediment as cost-effective alternatives to the proposed project or disposal alternatives.

In summary, we cannct concur at this time with your assessment that the in-channel location is the least damaging practicable alternative for the disposal of contaminated sediments in Boston Harbor. The outstanding water quality issues need to be evaluated and the environmental consequences understood before final decisions on the in-channel disposal alternative are made. Due to the significant degradation in Boston Harbor from cumulative dredge and fill activities, we do not concur that use of the Little Mystic Channel is an acceptable disposal alternative, or that such disposal complies with the 404(b)(1) Guidelines. We recommend that Little Mystic Channel be deleted as a contingency site. Questions concerning these comments should be directed to Mr. Vern Lang of this office at 603-225-1411.

Sincerely yours,

Kenneth C. Carr
Acting Supervisor
New England Field Office

CC: Reading File
P. Jackson, NED
P. Colarusso, EPA
P. Whitten, EPA
C. Mantzaris, NMFS
N. Faramelli, Massport
L. Bridges, MADMF
J. Perry, MADEP/DWPC
D. Bobb-Brott, MACZM
S. Lipman, MADEP
OEPC
BFA (ERT)

ES: VLang:jd:8-11-95:603-225-1411

Responses to Letter From
U.S. Department of the Interior, Fish and Wildlife Service, New England Field Office, 11 August 1995

1. Pg. 2, para 1 - (see responses to ISSUE 7, Attach. 2-B)

2. Pg. 2, para 2 - (see responses to ISSUE 8, Attach. 2-B)

3. Pg. 3, para 2 -

Little Mystic Channel would be filled to -3 feet MLW, thereby maintaining a subtidal habitat. Also, see responses to ISSUE 11, Attach. 2-B.

4. Pg. 3, para 3 - (see responses to ISSUE 11, Attach. 2-B)

5. Pg. 3, para 4 -

As stated in response to comments on the DEIR/S, regulating the navigation channels (as was done in Providence Harbor) is not feasible for Boston Harbor, and relocating terminals in Boston Harbor is not practicable and could cause as much or more environmental impacts both upland and water-based. New England Division will continue to evaluate and monitor developments at other Corps Districts regarding the use of geotextile bags. There are no plans to develop a demonstration project for the project at the present time. The geotextile bags are considered uneconomical for a project of this size. Demonstration of geotextile bags and other technologies may be considered for maintenance of the project.

6. Pg. 4, last para -

The first sentence contradicts the assessment by the U.S. Environmental Protection Agency (which is the only agency with authority to veto a Corps determination) which states that the in-channel disposal alternative is the least damaging practicable alternative (LEDPA) for the contaminated material. In addition the Division Engineer has determined that the selected disposal plan for contaminated silt from Boston Harbor (for Federal and permit material) complies with Clean Water Act 404 (b)(1) guidelines. Water quality modeling was performed using Federal water quality criteria to determine if the disposal site passes Federal water quality standards. Volume 3, Section F of the FEIR/S describes the water quality modeling results. The disposal site is also expected to meet State water quality standards, which are generally more qualitative. The Massachusetts water quality certification process requires that a mixing zone, which defines the boundary where chronic water quality criteria are not violated, be established and this zone not interfere with nor impact local natural resources. In Massachusetts, Water Quality Certification and Coastal Zone Consistency Determination is not initiated until the MEPA (EIR) process is complete.

Also, refer to comment number 4 above regarding Little Mystic Channel.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

August 23, 1995

Earle Richardson
Colonel, Corps of Engineers
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149

OFFICE OF THE
REGIONAL ADMINISTRATOR

Dear Colonel Richardson:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, we have reviewed the Final Environmental Impact Statement (FEIS) for the proposed Boston Harbor Navigation Improvement Project (BHNIP).

This project proposes to remove and dispose of approximately 3.4 million cubic yards (mcy) of sediment and 132,000 cubic yards of rock from the Reserved, Mystic River, and Chelsea Creek Channels, portions of the Main Ship Channel, and associated berthing areas in Boston Harbor in order to increase the navigational efficiency of Boston Harbor for deep draft vessels. Of this material, 1.3 mcy (essentially the surface silt material) is contaminated with metals, PCBs, PAHs, and other chemicals and is considered to be unsuitable for unconfined open water disposal under the Marine Protection, Research and Sanctuaries Act (33 U.S.C. Sec. 1401 et seq.) (MPRSA).

In addition to the above volumes, the Corps estimates that another 4.4 mcy of material will need to be removed from the Main Channel over the next 50 years to maintain channel depths. It is assumed that this material will also be unsuitable for unconfined open water disposal under the MPRSA. With this total volume, the BHNIP remains one of the largest dredging projects in the history of New England.

As in the DEIS, the FEIS evaluates two sets of alternatives - dredging alternatives and disposal alternatives for the dredged material. Dredging alternatives include: maintenance dredging only; the full project (maintenance and improvement dredging); a reduced-scale project; a delayed project; and No Action (no maintenance or improvement dredging). Disposal alternatives include several land-based and aquatic-based options, alone and in combination with each other.

In the DEIS the Corps proposed to approve the full project alternative and identified five preferred options for contaminated dredged material disposal: the Massachusetts Bay Disposal Site (MBDS); the Boston Lightship (BLS); Meisburger 2; Meisburger 7; and Spectacle Island Confined Aquatic Disposal (CAD). In the FEIS the

Corps continues to propose the full project alternative, but has identified In-Channel disposal (ICD) with capping as the Least Environmentally Damaging Practicable Alternative (LEDPA) for contaminated dredged material disposal. Under this alternative trenches would be dug into portions of the Boston Inner Harbor dredge site, then filled with contaminated silts and covered with clean cap material to authorized project depths. Based on our review of the FEIS, EPA endorses both the full project alternative and the In-Channel with capping disposal option.

Let me begin by saying that I believe the three-year coordinated effort between public and private groups to identify a sound dredging and disposal plan for the Port of Boston has been a constructive and successful process. When this environmental review began, there was little agreement between concerned groups over how to manage the Port's dredging problems. About the only thing that could be agreed on was the need and desire to maintain the economic vitality of one of our nation's oldest seaports.

Further, as you know, EPA's 6-27-94 comments on the DEIS raised serious environmental concerns about the Corps' previously preferred disposal sites, the adequacy of the environmental analysis in the EIS, issues surrounding the use of capping in deep ocean waters as a management tool for contaminated dredged material disposal, and the need to examine innovative technologies for dredged material management.

With release of the FEIS, some of these concerns remain; in particular, the proposed project does little to address the long-term needs of the Region for contaminated dredged material management. More effort is necessary from both our agencies and the states to find environmentally sound and technically innovative solutions to dredging problems that will continue to face Boston and other ports around New England and the country.

In other important respects, however, we believe that changes made by the Corps to the proposed project (discussed below) have been responsive to several major concerns expressed in EPA's earlier comments and that, as a result, significant improvements to the project have been achieved. Based on these improvements, as stated above, EPA endorses the Corps preferred disposal option--In-Channel with capping. We continue to have concerns, however, about the use of sites identified in the EIS for future contingency and maintenance material disposal. These and other issues are discussed more fully below.

o With regard to In-Channel Disposal, based on the analysis provided, EPA agrees that this option clearly has environmental and logistical advantages that place it well above other options evaluated in the EIS and that it represents the LEDPA for disposal of contaminated dredged material. As stated in our previous comments, this option has the advantage of a small footprint, or

total area of impact, in an area that has already been disturbed by previous dredging operations. Furthermore, based on the information available, biological resources at this site are of a lower quality in terms of benthic productivity and diversity than those at the other sites examined. Impacts to these resources will be temporary, while biological quality in the longer term will improve with the use of clean cap material (or at least be no worse than what currently exists at this site). Finally, we believe that water quality and down-stream impacts from dredging and disposal in-channel, if properly managed, will be minimal.

o With regard to other sites considered for future use, the FEIS indicates that Little Mystic Channel (LMC) is the LEDPA for a "contingency site" (in case more capacity is needed for the BHNIP material), while the MBDS (with capping), BLS, the Meisberger sites, and some upland sites may be suitable for future maintenance material.

Our position with regard to use of the MBDS and BLS are discussed further below. With regard to the other sites identified, EPA supports the proposed excavation of in-channel cells to create extra capacity and, following this, the use of upland sites for excess material. Aquatic sites, such as LMC, should not be considered until all upland sites have been exhausted or ruled impracticable. Further, we continue to believe that more scientific information is necessary to fully evaluate the potential environmental impacts of disposal at the sites identified for future use in the FEIS, including LMC, and thus cannot endorse these sites at this time (see 6-27-94 comments).

o Concerning the previously proposed use of the MBDS with capping, we applaud the Corps' decision to drop this option as an alternative for contaminated dredged material disposal. As you are aware, EPA raised serious objections to this alternative in our comments on the DEIS based on concerns that remain today about the efficacy of capping (see 6-27-94 comments). Stated briefly, EPA believes that capping of contaminated dredged material has not been shown to be an effective, environmentally sound approach to disposal of contaminated sediments at deep water sites like the MBDS or the BLS. Based on this, we do not consider either MBDS or BLS to be legitimate disposal options for material that does not meet requirements under the MPRSA.

We reiterate, however, that our respective agencies bear a responsibility to resolve together the uncertainties of capping as a disposal technique and that a joint demonstration project using dredged material that meets the requirements of the MPRSA would be helpful to that end. We recommend a meeting in the near future to discuss our prospects for a collaborative effort in this regard.

o We commend the Corps for its re-evaluation of surface sediment quality from the BHNIP and its associated berthing areas. Based on

this re-evaluation, our agencies are in agreement that the 1.3 mcy of maintenance material to be dredged from this project does not meet the ocean discharge criteria under 40 CFR Part 227 and thus is not suitable for unconfined open water disposal as regulated under the Marine Protection, Research and Sanctuaries Act (33 U.S.C. Sec. 1401 et seq.) (MPRSA).

- We appreciate the additional information provided in the FEIS on combination disposal site alternatives and the potential secondary and cumulative impacts from the BHNIP. While the benefits of the ICD option clearly outweigh any of the combination alternatives considered, these options may show more promise in the future. In this respect, we believe that the FEIS improved on the previous analysis provided in the DEIS. With regard to practicability, however, we found the discussion of criteria by which an alternative was judged practicable to be confusing in that it seemed to arbitrarily apply standards, such as whether a site was publicly or privately owned or whether there is a need for additional data, when drawing its conclusions. We would want to reexamine this approach should it be taken again in the future.

- Finally, there are important issues about the implementation and operation of the future dredging activities for the BHNIP that have been legitimately deferred until the permitting process for this project. It is important to understand, however, that the environmental acceptability of the BHNIP project hinges in no small part on the application of appropriate permit conditions and their proper implementation. It will thus be very important that our agencies and other interested parties work closely together during the next phase of this project.

In conclusion we would like to thank the Corps and Massport for the opportunity to work closely with them and others over the past many months on the analysis and design of the BHNIP. It is in my judgement a testimony to the twin goals of sound environmental management and responsible development that so many disparate groups were together able to forge a consensus on how to proceed with this important project in an environmentally protective manner. EPA looks forward to a continued close working relationship with the Corps and others as our agencies move into the permitting stage for this project. Please feel free to call me (617/565-3400) or Patience Whitten of my staff (617/565-3413) if you have any questions or comments.

Sincerely,

John P. DeVillars
Regional Administrator

Responses to Letter From
U.S. Environmental Protection Agency, Region 1, 23 August 1995

1. Pg. 2, para 4 -

New England Division is committed to providing appropriate resources to address the long-term needs for the region for disposal of contaminated sediment. NED has conducted Section 22 studies to begin to identify the need and issues on this topic. We will continue to provide support, along with the Commonwealth of Massachusetts (and other states), U.S. EPA, and other appropriate agencies to address this question.

2. Pg. 3, para 2-3 -

Before any site would be used for future disposal of contaminated material, the NEPA process would be initiated, and applicable environmental laws and regulations followed. If other sites, besides Little Mystic Channel, are considered as the LEDPA site then they would be used.

3. Pg. 3, para 4 -

The New England Division will evaluate projects as they come along to demonstrate the feasibility of capping at the MBDS. These demonstration projects would be coordinated with appropriate agencies, including the U.S. EPA.

4. Pg. 4, para 2 -

We would continue to coordinate with appropriate agencies on criteria for alternatives in the future, if it is determined to be pertinent.

5. Pg. 4, para 3 -

The Corps and Massport are working closely with the State agencies to resolve any remaining concerns regarding permit conditions and project implementation. It is expected that these concerns will be resolved in a timely manner.

UNITED STATES DEPARTMENT OF COMMERCE
Office of the Under Secretary for
Oceans and Atmosphere
Washington, D.C. 20230

August 29, 1995

SEP 1 -

Colonel Earle C. Richardson
Division Engineer
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149

Dear Colonel Richardson:

The National Oceanic and Atmospheric Administration (NOAA) has reviewed the Final Environmental Impact Report/Statement (FEIR/S) for the Boston Harbor Navigation Improvement and Berth Dredging Project. The enclosed comments incorporate concerns from the National Marine Fisheries Service, the Stellwagen Bank National Marine Sanctuary, and the National Ocean Service / Office of Coastal Resource Management.

The proposed project would include dredging 1,100,000 cubic yards (cy) of contaminated silt, 1,680,000 cy of uncontaminated parent material (primarily clay), and 88,000 cy of rock. An additional 1,800,000 cy of parent material would be dredged to create in-channel disposal sites for the contaminated material, and the disposal sites would be capped with a three foot layer of clean sand. Portions of the cap would then be armored with rock to protect against erosion. Because of expansion during dredging and handling, a larger volume of material would require disposal: 1,360,000 cy of silt, 132,000 cy of rock, and 3,331,000 cy of parent material. Another 6,125,000 cy of material from the main channel and tributaries (most of which presumably will be contaminated) would require disposal over the 50 year design life of the project.

NOAA provided extensive comments on the Draft EIR/S, and many of our concerns have been addressed in the FEIR/S. However, a number of important issues remain. We recommend that the Corps of Engineers address these concerns before proceeding with the federal navigation project, and prior to issuing a permit to Massport for the non-federal portions of the project.

If you have any questions about our comments, please contact Jonathan Kurland at (508) 281-9204.

Sincerely,

Donna Wieting
Acting Director
Ecology and Conservation Office

Enclosure

cc: Trudy Coxe - Massachusetts EOEA
Ed Woo - EPA
Vern Lang - USFWS
Deerin Babb-Brott - MA CZM
Scott Cassel - MA EOEA
Leigh Bridges - MA DMF
Cathy Demos - ACOE, Waltham
Pete Jackson - ACOE, Waltham
Karen Adams - ACOE, Waltham
Pat Fiorelli - NEFMC, Saugus
Janeen Hanson - Massport
Grace Perez - Conservation Law Foundation
Jodi Sugerman - Save the Harbor / Save the Bay
Tim Eichenberg - Center for Marine Conservation

NOAA:
F/NEO2 - Laurie Silva, Jon Kurland
F/NECx1 - David Dow
F/HP1 - Jim Burgess
N/ORM240 - Brad Barr
N/ORM3 - Patricia Scott

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) COMMENTS ON THE FINAL ENVIRONMENTAL IMPACT STATEMENT/REPORT FOR THE BOSTON HARBOR NAVIGATION IMPROVEMENT PROJECT

NOAA has a number of outstanding concerns regarding the proposed Boston Harbor Navigation Improvement Project. We recommend that the Corps of Engineers address the following issues (which are not necessarily listed in order of priority) before proceeding with the federal navigation project, and prior to issuing a permit to Massport for the non-federal portions of the project.

1. The finfish and benthic sampling performed by Normandeau Associates at the proposed in-channel disposal sites does not provide an adequate characterization of the habitat value of those sites or their seasonal use by important living marine resources. NOAA is concerned that sufficient data does not exist to determine the seasonal distribution of species such as winter flounder, menhaden, river herring, and rainbow smelt in the Inner Confluence, Chelsea Creek, and the Mystic River. It will not be possible to determine whether existing habitat functions are restored after dredged material disposal and capping unless the existing conditions are documented before the project begins. We recommend that the Corps and Massport continue their fish sampling effort for the in-channel sites, but increase the frequency of sampling to once per month for a minimum of 12 months. Based on the results of this sampling, additional coordination with the National Marine Fisheries Service and Massachusetts Division of Marine Fisheries may be necessary to refine the Dredging Management Plan to minimize conflicts between dredging and fish in Boston Harbor.

2. The FEIR/S does not provide a detailed analysis of the anticipated capacity of the in-channel disposal sites, and suggests that the in-channel sites might not provide the volume necessary to hold all of the contaminated dredged material. Based on previous presentations from the Corps, we were under the impression that the in-channel sites had more than adequate capacity. We recommend that the Corps re-examine this issue and include in the Dredging Management Plan specific procedures to ensure that disposal cells will be built sufficiently deep and filled to the maximum necessary capacity to hold all of the contaminated sediments. The Corps should also develop specific contingency plans for disposal of any contaminated material that cannot be contained in-channel. As discussed below, based on the information currently available, NOAA does not concur with the FEIR/S conclusion that disposal in Little Mystic Channel is the least environmentally damaging practicable alternative for dredged material that cannot be contained in-channel.

3. The FEIR/S selects Little Mystic Channel as an alternative disposal site for up to 373,000 cy of contaminated dredged material. The material would be capped on-site, changing approximately 15 acres of the existing bottom to an intertidal environment. Based on the limited fish data collected for this project, Little Mystic Channel, although somewhat degraded at present, provides valuable habitat for a variety of marine species including lobster, winter flounder, rainbow smelt, Atlantic tomcod, alewife, cunner, and butterfish. With the ongoing effort to improve water quality in Boston Harbor, habitat conditions in Little Mystic Channel will likely improve over time. We recommend that the Corps and Massport evaluate the practicability of less damaging alternative disposal sites for any dredged material that cannot be contained in-channel. For example, upland disposal may be feasible for a limited quantity of material, or additional in-channel cells could be created in Chelsea Creek below the Chelsea Street bridge.

4. The FEIR/S describes the capping procedure for the in-channel cells including the placement of a three foot sand cap over each cell and rock armoring over portions of the cap that are susceptible to erosion from vessel activity. We agree that a three foot sand cap is appropriate for this project, and that it should be armored as necessary. We recommend that the Corps identify the source of the sand as early as possible in project planning, particularly if offshore sand mining is being considered, since extensive coordination with NOAA and other agencies would be necessary. We also recommend that the Corps identify which portions of the cap would be armored, and coordinate that decision with the state and federal resource agencies.

5. In NOAA's comments on the Draft EIR/S, we expressed concern about the potential for residual contaminated silt to be mixed in with parent clay material during the dredging process and dumped at the Massachusetts Bay Disposal Site (MBDS). We also recommended that the FEIR/S evaluate the degree of such mixing in detail. The FEIR/S acknowledges that some silty material would be left behind in Boston Harbor after the initial dredging with environmental buckets is complete, but the document does not estimate what fraction of this material would then be dredged with standard toothed buckets along with the clean parent material and subsequently transported to MBDS. We continue to recommend that the Corps attempt to quantify what fraction of the dredged parent material (on a barge-load basis) would be tainted by residual contaminated silt, and assess the effects of dumping this material at MBDS.

6. The FEIR/S discusses in detail the various technologies that would be used to minimize the environmental impacts of dredging contaminated sediments. These techniques include using sealed environmental bucket dredges, integral bucket covers with purge

valves, seal indicators, and other sophisticated equipment. These measures should substantially reduce turbidity and the release of contaminants during the dredging operations. However, the FEIR/S does not discuss any comparable measures to be used during in-channel dredged material disposal. Instead, it appears that dredged material which would be carefully removed from the harbor to minimize the loss of contaminated silt would later be dumped from scows without containment into the in-channel disposal cells. Given the large quantity of silty material requiring disposal, we recommend that the Corps and Massport evaluate the feasibility of using available technologies for turbidity control during disposal operations. A variety of devices have been used for dredged material disposal projects, including "elephant trunks" -- large chutes through which the material can be shunted down to the bottom, limiting turbidity to the immediate vicinity of the disposal site. The chutes can also be fitted with deflectors to aid in dredged material placement. This technology and/or others could substantially reduce the indirect impacts of the disposal process.

7. The FEIR/S discusses the possible need to limit or stop the proposed project in the Mystic River and Inner Confluence during the migratory and spawning periods for winter flounder and anadromous fish from February 1 though June 15. The document also states that sonic startle systems, bubble curtains, or other devices would be used to encourage fish to leave the work area during blasting. Depending on the concentration and seasonal distribution of fish in the Mystic River, Chelsea Creek, and the Inner Confluence, it may be appropriate to use a fish startle system together with side scan sonar on a frequent basis throughout the entire project, not just during blasting. During project implementation, decisions about when to use such techniques and when it may be necessary to stop project operations temporarily to protect marine resources are best left to a qualified fisheries biologist working on-site. We recommend that the Corps and Massport retain an independent fisheries biologist (e.g., working for the Massachusetts Division of Marine Fisheries rather than the dredge contractor) to monitor the project full time, dividing his or her time between the two dredge plants working on the project.

8. Project plans call for disposing of the rock and parent dredged material from the project at the Massachusetts Bay Disposal Site (MBDS). NOAA is concerned with ensuring that appropriate procedures are in place to confirm the location of the scows immediately prior to disposal. Side scan sonar has detected evidence of rock disposal on Stellwagen Bank during the period prior to the final designation of MBDS. A portion of this rock material appears to have been dumped within the boundary of the Stellwagen Bank National Marine Sanctuary. Although the current (final) MBDS site is further from Stellwagen Bank, it remains important to confirm that scows are located at the

approved disposal site prior to the release of dredged material. If the Corps intends to use more than one disposal location within the approved MBDS boundary (e.g., if rock would be dumped in a different location than clay, or if clay disposal would be spread over more than one location), we recommend that the Corps deploy taut wire buoys at each intended dump site. We also recommend that the Corps require the contractor to use an independent disposal inspector (i.e., not employed by the dredge contractor) on each scow bound for MBDS, and that the inspector maintain a log of each disposal event to confirm that disposal occurs only at the appropriate MBDS disposal buoy.

9. We recommend that the Corps and Massport develop a specific long-term monitoring program for the in-channel disposal sites to document cap integrity over time and re-colonization by benthic organisms, fish, shellfish, and crustaceans. The discussion on long-term monitoring in the FEIR/S is far too general, since it relies on the Corps' existing DAMOS monitoring program to evaluate the disposal sites for this project. The DAMOS program has limited resources, and may not be capable of carrying out a full monitoring program for this project. Instead, we recommend using a separately funded monitoring program specifically tailored to this project, and developed in consultation with NOAA and the other federal and state resource agencies. The monitoring should focus on both the initial placement of a cap over the in-channel disposal cells and the long term stability of the cap, particularly since in-channel dredged material disposal is a relatively new technique. Since the project includes numerous private berth owners, we recommend that you condition the permit for the non-federal portion of the project to require the applicants to fund an appropriate share of the monitoring.

10. NOAA recently received from the Corps a revised Biological Assessment for this project pursuant to Section 7(c) of the Endangered Species Act. The National Marine Fisheries Service is currently reviewing that document and will prepare a Biological Opinion, which will be forwarded to you under separate cover.

11. Pursuant to Sections 304(d) and 2202 of the National Marine Sanctuaries Act, the Corps has indicated that it will soon initiate formal consultation with the Stellwagen Bank National Marine Sanctuary since this project may affect Sanctuary resources. The Corps will be required to submit to the Sanctuary a written statement describing the project and its potential effects on Sanctuary resources. While NOAA would encourage the Corps to initiate consultation as soon as possible, this statement must be provided to the Sanctuary no later than 45 days before the final approval of the project. To expedite this process, NOAA suggests that the Corps meet at the earliest possible time with the Sanctuary Manager to discuss the consultation for this project.

12. Various sections of the FEIR/S refer to Massachusetts Coastal Zone Management consistency requirements, but the document does not appear to include the Corps' federal consistency certification for the proposed action as required by Section 307 of the Coastal Zone Management Act (CZMA). In accordance with the 1990 amendments to the CZMA (16 U.S.C. Section 1451 et seq), federal agency activities within or outside the coastal zone that affect any land or water use or natural resource of the coastal zone are required to be conducted in a manner that is consistent to the maximum extent practicable with the enforceable policies of the Massachusetts Coastal Zone Management Program (see Section 307(c)(1)(A) of the CZMA).

13. The FEIR/S does not specifically discuss the socioeconomic environment that would be affected by the proposed project (including population, employment, etc.) or the anticipated impacts to these human uses. Also, if appropriate, the Corps should make an effort to comply with the Executive Order (dated February 11, 1994) on Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. That order is designed to focus federal attention on the environmental and human health conditions in minority communities and low-income communities with the goal of achieving environmental justice.

Responses to Letter From
U.S. Department of Commerce, Office of the Under Secretary for Oceans and Atmosphere, 29 August 1995

1. Pg. 1, para 1- (see responses to ISSUE 1, Attach. 2-B)

2. Pg.1, para 2 - (see responses to ISSUE 2, Attach. 2-B)

3. Pg. 2, para 3 - (see responses to ISSUE 11, Attach. 2-B)

4. Pg. 2, para 4 -

The sand is likely to come from a commercial upland source. If the sand were to be mined from an offshore location, then appropriate coordination would take place. Initial evaluations indicate that armoring will occur in Inner Confluence and in cells 13-18 in the Mystic River. We will meet with the State agencies to address these topics.

5. Pg. 2, para 5 - (see responses to ISSUE 3, Attach. 2-B)

6. Pg. 3, para 6 - (see responses to ISSUE 4, Attach. 2-B)

7. Pg. 3, para 7 - (see responses to ISSUE 5, Attach. 2-B)

8. Pg. 3, para 8 -

The Corps employs inspectors for recording disposal location and time and taut-wire buoys for targeting the disposal point. No short or long disposal is expected. The material to be disposed at the MBDS is clean Boston blue clay, sand or gravel. In addition an independent observer will be hired to monitor dredging and disposal activities for Mass. CZM.

9. Pg. 4, para 9 - (see responses to ISSUE 10, Attach. 2-B)

10. Pg.4, para 11 - (see responses to ISSUE 6, Attach. 2-B)

11. Pg. 5, para 12 -

As stated in the FEIR/S, the Corps will be applying for a Coastal Zone consistency determination from the Commonwealth of Massachusetts. The Corps can not apply for a consistency determination until the MEPA process is complete.

12. Pg. 5, para 13 -

Socioeconomic factors were discussed in the DEIR/S. Because the project will stay within the current project limits, no additional adverse impacts to low income or minority populations is expected. In fact, capping the contaminated material with clean material can improve the environment.

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street

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CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS ON THE FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME	: Boston Harbor Navigation Improvement and Berth Dredging Project
PROJECT LOCATION	: Boston
EOEA NUMBER	: 8695
PROJECT PROPONENT	: Massport
DATE NOTICED IN MONITOR	: August 8, 1995

The Secretary of Environmental Affairs herein issues a statement that the Final Environmental Impact Report submitted on the above project adequately and properly complies with the Massachusetts Environmental Policy Act (G. L. c. 30, s. 61-62H) and with its implementing regulations (301 CMR 11.00).

The Boston Harbor Navigation Improvement Project (BHNIP) involves improvement dredging of approximately 3,300,000 cubic yards (cy) of sediments and bedrock from three channels in the Mystic River, Chelsea Creek and the Reserved Channel, and from twelve or more berth areas. The Mystic River and Reserved Channel will be dredged to -40 feet mean low water datum (ft mlw), Chelsea Creek to -38 ft mlw, and the berth areas to the depth of the channel on which they are located.

The materials to be dredged include approximately 132,000 cy of bedrock to be blasted from the main ship channel, 2,000,000 cy of Boston blue clay and approximately 1,300,000 cy of contaminated silts. The bedrock and Boston blue clay are uncontaminated and are suitable for unconfined disposal at the Massachusetts Bay Disposal Site (MBDS). The contaminated silts are not suitable for unconfined ocean disposal.

The Final EIR has evaluated a number of alternative disposal schemes for the contaminated sediments and has identified in-channel disposal in borrow pits, with capping by clean sediments, as the least environmentally damaging disposal option. The uncontaminated sediments and bedrock will be disposed at the MBDS.

Based on the comments received on the FEIR, this option has broad support among Federal and State regulatory agencies and environmental groups. The FEIR has shown that this proposal is feasible and that it should result in significant environmental as well as navigational benefits.

Although the FEIR has adequately defined the project and has shown it to be feasible, there are several areas where additional details and controls will be required before permits can be issued. I expect that the permitting agencies will provide the necessary detail and controls in Section 61 Findings issued prior to or contemporaneously with any permits. The following issues will require detailed analysis in Section 61 Findings.

WATER QUALITY MONITORING

Although the FEIR and supplemental water quality modelling information provided during review of the FEIR has indicated that the proposed project can be implemented so as to meet State and Federal Water Quality Standards, the Section 61 Finding issued with the Section 401 Water Quality Certification should provide for additional water quality monitoring to ensure protection of fishery resources. This Section 61 Finding should also provide a contingency plan to utilize side scan sonar and/or a fish "startle" system to protect fisheries resources in the event of an unanticipated water quality problem.

FISHERIES SAMPLING

The FEIR provides data from a spring and fall fisheries sampling program. The Division of Marine Fisheries indicates that a monthly sampling of fisheries resources is crucial to an understanding of fish activity within the dredging and disposal areas. In the absence of this monthly sampling data, the Division indicates that permanent fish protection devices will be required during the dredging and disposal operations. I expect that this issue will be addressed in the 401 review process and will be included in the Section 61 Finding issued under Water Quality Certification.

CAPACITY OF IN-CHANNEL DISPOSAL

The Corps of Engineers has indicated confidence that the proposed in-channel disposal pits will have adequate capacity for the contaminated silts. The Corps also indicates that further capacity can be created in-channel without causing adverse environmental impact. For purposes of this decision, I accept the Corps assertions. However, if these assertions prove to be incorrect during construction and additional capacity in other than in-channel locations is required, Massport should file a Notice of Project Change as soon as the shortfall is identified to ensure proper environmental review of an alternative disposal site.

PROTECTION OF UTILITIES

The comments of the Massachusetts Water Resources Authority and the Boston Water and Sewer Commission identify a number of utilities that are located within the dredging and disposal areas. Massport should coordinate closely with these agencies prior to and during the dredging operation.

DREDGE MANAGEMENT PLAN AND MONITORING OF RESULTS

The FEIR contains a dredge management plan that provides a generalized overview of the technical details of the dredging and disposal elements. Timing, methodology, and sequencing of operations are expected to be specifically determined during permitting. I expect that Massport will provide the Department of Environmental Protection with sufficient information in the permit applications to allow the Section 61 Finding to contain a detailed management plan, including contingency plans. These contingency plans should be responsive to the specific comments contained in the attached letters.

Furthermore, the FEIR is unable to provide detailed information on cell construction, performance during disposal, and capping success. This information can only be gained during the dredging and disposal operations. The Section 61 Finding should provide a detailed monitoring plan to ensure that this disposal option can meet the environmental performance standards. I note that, once a clear understanding of cell performance is obtained, further monitoring should only be required to confirm that standards are being met.

BENEFICIAL REUSE

The DEP indicates in its comment letter that much of the parent (uncontaminated) material to be dredged could be used as capping material on landfills that are currently being, or will shortly be, closed. Although I recognize that this disposal option may not be currently cost-effective for this project, I believe that this option should be included in the project design and listed as an option in the bid documents to ensure that this beneficial reuse occurs if practicable.

INDEPENDENT MONITORING

Although I cannot specifically require independent environmental monitoring of the dredging and disposal operations, I agree with many of the commentors that such a monitor, reporting directly to the State regulatory agencies, is likely to further ensure strict compliance with environmental standards and I urge Massport to give this proposal further consideration.

PROJECT CHANGES

The finding of adequacy on this FEIR is based in part on the quality of its analysis, but also on a major assumption that the preferred alternative will be successful as proposed and that other alternatives, such as Upland Disposal and the Little Mystic Channel, need not be further evaluated at this time.

Should information become available that the preferred alternative requires major modification, or that other alternatives will be needed, it is essential that a Notice of Project Change be filed forthwith. Given that other alternatives have in fact been identified and could be analyzed further now, it will not be possible to argue in the future that such further analysis and review should not be required for lack of time.

I encourage Massport to consider the suggestion by commentors that it participate in a demonstration project to identify another disposal site and methodology to provide the additional analysis that would be required for such a contingency and for long term maintenance dredging requirements.

LONG TERM MAINTENANCE DREDGING

Several commentors have expressed serious concerns with the long term maintenance dredging that will be required over the next fifty years to maintain the improved channels. Although this maintenance dredging is not necessarily a part of this project, it clearly will be required in the future and should be addressed by Massport and the Corps of Engineers sooner rather than later.

In this regard, I believe it is important that these agencies begin a project to find a safe, environmentally sound treatment or disposal process to deal with contaminated spoil from future maintenance dredging. The Corps has begun such a process with the Massachusetts Navigation and Dredging Study, and the EIR process has provided additional information on disposal sites. Furthermore, the Executive Office of Environmental Affairs, with funding from the Seaport Bond, is undertaking a statewide contaminated sediment disposal plan. MCZM has initiated implementation of this planning effort. I encourage Massport, MCZM and the Corps to continue these investigations and demonstrations.

COMMENTS

The attached comments provide further elaboration on these issues and identify some additional issues that warrant inclusion in Section 61 findings to be issued for this project. I expect that these comments will be carefully considered during review and permitting.

CONCLUSION

I find that the FEIR, supplemented by additional testing information, adequately addresses the majority of concerns with this project. With exception of those contingency issues which would require a Notice of Project Change, all the remaining issues can and should be addressed during agency permitting processes, many of which provide for additional public review and comment.

I wish to highlight the innovative process developed by the proponent and the reviewing agencies to define issues, including permitting issues, establish protocols and develop a comprehensive analysis that is likely to have long term benefits well beyond the short term implementation of the dredging

project.

I encourage Massport to continue cooperating with the Dredging Working Group to address the outstanding issues found in this Certificate and in the comments received on the FEIR.

September 14, 1995
Date

Trudy Coxe, Secretary

Comments received : Department of Environmental Protection
Coastal Zone Management
Division of Marine Fisheries
Massachusetts Water Resources Authority
Boston Environment Department
Boston Redevelopment Authority
Boston Water and Sewer Commission
Save the Harbor/Save the Bay
Coastal Advocacy Network
The Boston Harbor Association
Boston Towing and Transportation Company
InnovaTech Associates

TC/rf

Responses to Letter From
Executive Office of Environmental Affairs, (Certificate of the Secretary of Environmental Affairs), 14 September 1995

1. Pg. 2, para 4 -
It is anticipated that a plume monitoring program will be in place during construction of the project. Additional discussions with the Commonwealth, Massport and the Corps to discuss this contingency are planned.

2. Pg. 2, para 5 - (see responses to ISSUE 1, Attach. 2-B)

3. Pg. 3, para 1 -
Massport would take responsibility for filing a notice of project change if necessary.

4. Pg. 3, para 2 -
The Corps and Massport had several meetings with the Massachusetts Water Resources Authority staff to discuss utility relocation in 1994 and on November 2, 1995. Additional meetings are anticipated.

5. Pg. 3, para 3-4 -
Massport and the Corps will address concerns expressed by the Commonwealth on the dredging management plan. A plan to monitor the performance of the disposal cells will be coordinated with appropriate agencies. Also see responses to ISSUE 10, Attach. 2-B.

6. Pg. 4, para 1 -
The Corps can incorporate this option in the bid documents.

7. Pg. 4, para 2 - (see responses to ISSUE 9, Attach. 2-B)

8. Pg. 4, para 4 -
Massport will provide the essential information to the Commonwealth if this option becomes necessary.

9. Pg. 4, para 5 -

Massport, the Corps, and the U.S. EPA are supportive of a long-term maintenance dredging solution. These agencies will commit the appropriate resources, along with the Commonwealth, to address this concern.

10. Pg. 5, para 1-2 -

The EIR/S describes disposal options that may be suitable for future maintenance of the project. Prior to selecting a site for maintenance of this project the appropriate environmental procedures will be followed. As described in the previous response, Federal and state agencies have been working toward developing a long-term dredged material disposal plan for Massachusetts. If a plan is in place in time for required maintenance then its recommendation will be considered.

Attachment 2

Boston Harbor Navigation Improvement Project

Coordination with Federal and State Agencies Following the FEIR/S Comment Period

A. Letters from State Agencies on obtaining Water Quality Cert. and CZM Consistency

B. Permit Issues, Corps Responses, and letters from Federal and State Agencies

C. Biological Opinion

D. Stellwagen Bank Marine Sanctuary Consultation Letter

A. Letters from State Agencies on obtaining Water Quality Cert. and CZM Consistency

- Executive Office of Environmental Affairs, Department of Environmental Protection, 28 December 1995

- Executive Office of Environmental Affairs, Coastal Zone Management, 28 December 1995

Commonwealth of Massachusetts
Executive Office of Environmental Affairs
Department of Environmental Protection

William F. Weld
Governor
Argeo Paul Cellucci
Lt. Governor

Trudy Coxe
Secretary
David B. Struhs
Commissioner

December 28, 1995

Joseph Ignazio, Director of Planning
U.S. CORPS OF ENGINEERS
424 Trapelo Rd.
Waltham, MA 02254

Re: Boston Harbor Navigation Improvement Project

Dear Mr. Ignazio:

The proposed deepening of the navigation channels in Boston Harbor is a project that has received extensive review and coordination as it has been developed. While we don't have an actual application yet for 401 Water Quality Certification and do not know all the important operational details of the dredging and disposal within the Harbor, we do understand and concur in general with the proposed work as explained in the FEIR/EIS.

We fully expect to issue a conditional Water Quality Certification for the project in compliance with applicable state statutes and regulations.

If you have questions about this matter, please contact William Krol at 617-556-1099.

Sincerely,

Robert W. Golledge
Acting Director
Division of Wetlands and Waterways

cc: Steven Lipman, DEP/Boston Harbor Coordinator
John Simpson, DEP/Waterways Regulation Program
Peg Brady, Director, CZM
Cathy Demos, Planning Directorate, USCOE, Waltham
Bill Krol, DEP/DWW
bhnidp.ltr

One Winter Street • Boston, Massachusetts 02108 • FAX (617) 556-1049 • Telephone (617) 292-5500

COASTAL ZONE
MANAGEMENT

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street
Boston, Massachusetts 02202

December 28, 1995

Mr. Joseph Ignazio, Director of Planning
USACE/NED
424 Trapelo Road
Waltham, MA 02254-9149

RE: Boston Harbor Navigation Improvement Project

Dear Mr. Ignazio:

The Massachusetts Coastal Zone Management (MCZM) Office has reviewed materials related to the above-referenced project. The information has been provided to MCZM solely for the purpose of an evaluation of the project's suitability for funding relative to MCZM's enforceable program policies. MCZM has not reviewed the information provided to make a federal consistency decision.

Based solely on the information provided, MCZM has not identified any inconsistencies with its enforceable program policies.

MCZM will make a federal consistency decision following receipt of a federal consistency determination, together with other required information for the above-referenced project.

Please let us know if there is any other information you require.

Sincerely,

Peg Brady
Director

MMB/dbb

cc: Robert Gollege, Acting Director
DEP/Division of Wetlands and Waterways
Steven Lipman, Boston Harbor Coordinator

DEP Commissioner's Office
Peter Jackson, Project Manager
USACE
Janeen Hansen, Project Manager
Massport

B. Permit Issues, Corps Responses, and Letters from Federal and State Agencies

Eleven issues have been identified from the agency comments included in Attachment 1 which require resolution during the permit process. These issues, summarized below (references in italics), have been discussed with the commenting agencies to assure that the Corps' responses, included in this attachment, are satisfactory and that there is a reasonable likelihood that all of the concerns will be resolved in a manner acceptable the Corps and the agencies during the permit process. Letters of concurrence from the agencies are also included in this attachment.

ISSUE 1: The need for additional finfish and benthic sampling.
Agencies requested additional finfish and benthic sampling beyond that performed in order to obtain further characterization and seasonal use.
NOAA : Pg. 1, para 1; EOEA: Pg. 2, para 5

ISSUE 2: Capacity of in-channel placement sites.
NOAA was concerned about disposal capacity and the proposed contingency site, Little Mystic Channel, which is not considered by NOAA to be acceptable without further study.
NOAA : Pg. 1, para 2

ISSUE 3: Contamination of clean (parent) material by residual contaminated silts.
NOAA was concerned that some unsuitable material will mix with the suitable material to be dumped at the Mass. Bay Disposal Site (MBDS).
NOAA : Pg. 2, para 5

ISSUE 4: Use of impact reduction technologies
NOAA was concerned that environmental controls for the disposal operations were not at the same technological level as those proposed for dredging operations.
NOAA : Pg. 3, para 6

ISSUE 5: expanded use of fish startle systems and dredging windows
NOAA was concerned about protection of fisheries during all phases of the project, not just blasting and recommended measures to be taken.
NOAA : Pg. 3, para 7

ISSUE 6: impacts to the Stellwagen Bank National Marine Sanctuary
NOAA requested consultation with the sanctuary as required in Sections 304(d) and 2202 of the National Marine Sanctuaries Act.
NOAA : Pg. 4, para 11

ISSUE 7: impacts caused by resuspension (plumes) of contaminants/sediments during the 18-month construction period
USFWS was concerned that the organic particulate faction of the dredged material was not adequately modeled therefore its impacts were not adequately addressed.
USFWS: Pg. 2, para 1

ISSUE 8: the degree to which various fractions of maintenance-type material can be dredged and successfully contained
Agencies were concerned that the EIS claim that the project will result in a clean substrate and that all disposed silts will be contained is unlikely.
USFWS: Pg. 2, para 2; EOEA: Pg. 3. para 4

ISSUE 9: Use of an independent observer
EOEA as well as other commentors have requested an independent observer to oversee the project operations and compliance with permit conditions.
EOEA: Pg. 4, para 2

ISSUE 10: implementation of a specific long-term monitoring program
NOAA indicated that a long-term monitoring program is necessary and that traditional programs may not be adequate funded for the required program.
NOAA : Pg. 4, para 9 ; EOEA: Pg. 3

ISSUE 11: use of Little Mystic Channel as a contingency site
NOAA and other commentors disagreed with the selection of Little Mystic Channel as a contingency disposal site if in-channel disposal capacity is inadequate.
NOAA: Pg. 2, para 3; USFWS: Pg. 3, paras 2 and 3

Corps Responses to Issues Identified in Comments to the FEIR/S From Federal and State Agencies

References to letters:
Federal Agencies:
USFWS - U.S. Department of the Interior, Fish and Wildlife Service, New England Field Office, 11 August 1995

EPA - U.S. Environmental Protection Agency, Region 1, 23 August 1995

NOAA - U.S. Department of Commerce, Office of the Under Secretary for Oceans and Atmosphere, 29 August 1995

Commonwealth of Massachusetts
EOEA - Executive Office of Environmental Affairs, (Certificate of the Secretary of Environmental Affairs), 14 September 1995

ISSUE 1: The need for additional finfish and benthic sampling.

NOAA : Pg. 1, para 1; EOEA: Pg. 2, para 5
The Corps and Massport have performed spring and fall benthic, lobster, and finfish sampling at the proposed disposal sites. This information, along with other research performed in the area, show the biological character of Boston Harbor. The Corps does not consider additional sampling necessary to biologically characterize the in-channel disposal site. Recent coordination with NMFS finds that after further consideration there is no need for additional finfish and benthic sampling if there is water quality monitoring and a fish monitor/observer during construction, and benthic studies conducted after construction.

ISSUE 2: Capacity of in-channel placement sites.

NOAA : Pg. 1, para 2
It is estimated that the volume of silt required to be disposed of in the in-channel cells is 1,134,000 CY (Table 2-2 FEIR/S). For disposal capacity estimates it was assumed that silt will expand by 20% from its in-situ volume during dredging and handling and will therefore require 1,361,000 CY of storage capacity in the cells. The 20% expansion factor is conservatively high for unconsolidated silt which is frequently agitated by tides and vessel movements. Also, please refer to contingency site considerations in Issue 11.

If the cells are excavated to the depths shown in Table 3-18 in the FEIR/S and all cells were utilized then 1,412,800 CY of silt storage capacity would be created. This provides about 50,000 CY of excess capacity. In addition, there is one cell in the Inner

Confluence that has not been included in previous capacity calculations which if excavated to -60 MLW could provide about 21,500 CY of silt capacity. Based on these assumptions it is estimated that 71,500 CY in excess silt disposal capacity is available.

There is potential for greater disposal capacity if subsurface conditions allow for deeper cells. Due to limits in the seismic reflection survey to read below certain depths it is not known if subsurface conditions will allow for deeper cells than shown in the FEIR/S. The construction specifications will be written to allow the contractor to excavate cells as deep as practicable to maximize cell capacity. For example, if the contractor is able to dredge just two feet deeper in three cells he would gain an extra 10,000 CY of capacity. Furthermore, more capacity may be realized if the cell side slopes can sustain a steeper slope than the one vertical to three horizontal (1 on 3) used in the FEIR/S estimates. Experience with dredging parent material at Massport's Moran Terminal in 1993 showed steep slopes were obtainable. Since there are a total of 54 cells to be dredged it would be reasonable to anticipate some additional capacity to become available during dredging either by dredging deeper or cutting steeper slopes.

Recent CAD-based calculations of silt in berth areas, based on subsurface borings and surveys, indicate that volumes used in the FEIR/S are conservatively high.

ISSUE 3: Contamination of clean (parent) material by residual contaminated silts.

NOAA : Pg. 2, para 5
It is anticipated that some small amount of silt may be dredged during removal of the clean parent material, particularly along the boundaries of the work areas where some sloughing may occur. Because some "overdredging" into the parent layer will occur during the silt dredging it is unlikely that any silt will remain on the most of the work areas. This approach was used for the Central Artery/Third Harbor Tunnel Project for disposal of parent material at the MBDS.

It would be difficult to accurately determine the amount of silt on each barge. Although there are no known studies or monitoring that has looked at this issue, a reasonable estimate is that the contaminated silt would comprise less than 1% of the barge total. Most of the silt is light and would be displaced by the clamshell bucket during dredging. Even if the amount of contaminated material in the barge compromises a percentage larger than 1%, it is expected that the barge load would be suitable for unconfined disposal at the Massachusetts Bay Disposal Site (MBDS).

ISSUE 4: Use of impact reduction technologies

NOAA : Pg. 3, para 6
Water quality modeling results shows that dredging and disposal can be accomplished without violating water quality criteria. The Water Quality Modeling Report contained in Appendix F of the FEIR/S (Volume 3) demonstrated the lack of concentrations of constituents exceeding water quality criteria. Mixing zones based on TSS and PCB loadings were less than the width of the channel. These results indicate that additional precautions are not necessary.

There is a significant difference in the exposure of contaminated silts to the water column during dredging and disposal which helps to justify the use of an environmental bucket but no additional devices for disposal. It is noted that during the approximately 10 hours to load a scow the environmental bucket will move through the full water depth about 200 times. Conversely, the disposal process may take as little as two minutes to dump the entire 3-4,000 CY bargeload in one large cohesive mass. Also, the loaded barge would draw about 12-15 feet. When the doors open, another 5-8 feet of water column is partially shielded from contacting the silt during descent. Therefore only about 17 to 23 feet of the water column would be fully exposed to the silt over a short period of time.

Monitoring will be conducted to verify model results. If water quality certification is violated then contingency measures such as silt curtains or operational changes will be implemented.

ISSUE 5: expanded use of fish startle systems and dredging windows

NOAA : Pg. 3, para 7
The Corps and Massport are considering appropriate systems to minimize impacts to finfish during blasting. These measures which include stemming (blocking the charge hole with angular rock), and staggered (delayed sequence) charges in conjunction with pre-blast observations could reduce shock wave impacts by about 94% (Cape Fear, NC navigation improvement project). Additional measures such as bubble curtains or other barriers which could reduce impacts up 99.8% will also be evaluated. Traditional fish startle methods appear to have limited effectiveness and will not be used as the sole measure. Use of a fish monitor/observer could further reduce impacts to finfish during blasting by delaying blasting if large quantities of fish are observed in the area.

There are currently no plans to use devices to protect fish during dredging. Impacts to non-anadromous fish is expected to be minimal based on the water quality report and data from previously published reports. The fish will be able to travel around and avoid the dredging and disposal activity because the mixing zone extended only approximately 1/6 the distance across the respective channel width in the worst case disposal scenario (i.e. Mystic River). An environmental window (dredging and

disposal will cease in the Mystic Channel during February 1 to June 15) is part of the project to provide additional protection to anadromous finfish. As discussed in Issue 1 a fish monitor/observer would be included in the project. Massport and the Corps are preparing a scope of work for an independent observer (IO). The scope may include monitoring fish activity during project construction.

ISSUE 6: impacts to the Stellwagen Bank National Marine Sanctuary

NOAA : Pg. 4, para 11
The Corps has coordinated with the manager of the Stellwagen Bank National Marine Sanctuary (SBNMS) during the preparation of the EIR/S. A letter from the manager of the SBNMS states that the project has met the coordination requirements of the National Marine Sanctuaries Act.

ISSUE 7: impacts caused by resuspension (plumes) of contaminants/sediments during the 18-month construction period

USFWS: Pg. 2, para 1
Based on concerns expressed by agencies and environmental groups about potential water quality impacts from dredging and disposal, water quality modelling was performed to determine if the proposed project would violate applicable water quality standards. The results of the model indicated that water quality violations would not occur. Existing technology does not provide a method to accurately model organic particulate matter. It is recognized that this material has a longer settling time than the particles used in the water quality model. Contaminants would be expected to bind to the organic as well as inorganic fraction of the material. Although the water quality model does not analyze the organic portion of the material separately it is recognized that its concentration would be elevated during dredging and disposal and should quickly return to background levels after disposal activity ceases. This material is currently available to biological organisms in the harbor. Also, since the organic material is easily suspended by tidal currents and vessel traffic it is widely distributed throughout the harbor floor. It is likely that the project operations would show a measurable increase of organic particulate suspension, however it is not anticipated that the suspended particulates would significantly impact biological resources in the harbor. While there will be a temporary increase in turbidity in the harbor, the project will isolate some of the contaminated material upon completion of construction. Monitoring will measure total suspended solids, including organic particulates, to indicate any violations in water quality parameters.

The Corps and Massport will work with EOEA, USFWS and other interested agencies to develop a mutually agreeable water quality monitoring plan during the 401 certification/CZM consistency process.

ISSUE 8: the degree to which various fractions of maintenance-type material can be dredged and successfully contained

USFWS: Pg. 2, para 2; EOEA: Pg. 3. para 4
No where in the DEIR/S or the FEIR/S is it stated that all of the contaminated silt will be disposed in-channel. Only silt from that portion of the harbor which will be deepened will be disposed in-channel. However, this is a significant portion of the inner harbor. Even if the project did remove all of the flocculent material in the area dredged, similar material from adjacent areas will quickly move in and coat the deepened areas. The only method to prevent the covering of the dredged area with flocculent is to remove all flocculent from the harbor and stop all sources of this material which is beyond the scope of this project.

The New Bedford pilot study is not directly comparable to the BHNIP. The New Bedford Harbor project used a hydraulic dredge which entrains more water than mechanical dredging creating a more fluid material which had not settled adequately prior to capping attempts.

It is expected that some of the flocculent material will be displaced by heavier materials disposed in the cell. Work performed in Hong Kong Harbor showed evidence of a "mud lake" forming at the perimeter of a disposal cell. It appeared that disposal of dredged material into the cell was concentrated. The formation of a similar layer of flocculent material would be reduced by random disposal into the cell. Additionally, there is evidence that capping performed at the Eagle Harbor superfund site in Puget Sound was successful in containing soft sediments by using fire hoses to disperse sand from a deck barge to form the cap. The use of a sand slurry delivered at the water surface allowed "particles to fall to the bottom at their individual settling rates" and thus "minimized displacement of existing contaminated bottom sediments". The sand slurry method is proposed for the Boston Harbor Dredging Project.

In addition to a sand cap, portions of the in-channel disposal site that may be susceptible to erosion from vessel prop wash will be armored with project rock.

Boston Harbor is a tidal influenced estuary. The minor amount of deepening is not expected to significantly change the flushing rate currently experienced in the harbor for the following reasons. The inner harbor of Boston Harbor is very narrow, therefore, a normal mean tide range of 9.5 feet will interchange nearly 25% of the water in this area (9.5 feet tide range divided by 40 feet of average depth). With an approximate 5 feet increase in depth, the portion of the water interchanged will be reduced only a few percent to approximately 21% of the volume of water in the main channel. This large interchange in both pre- and post-dredged conditions should be sufficient to reduce most water quality problems associated with stratified conditions. The minor reduction in volume interchange would be made up within the next tide cycle. Therefore it is not expected that stratification or other water

column conditions will be worsened. By deepening the tributary channel to a depth close to or equal to that of the main ship channel (-40 feet MLW) circulation between the outer harbor and inner harbor and within the inner harbor may be improved at least near the channel bottom. Also, improved water quality conditions resulting from the MWRA project should further reduce the potential for low dissolved oxygen levels. A New England Aquarium 1990 report indicated that there was only a slight difference in dissolved oxygen levels between surface and bottom samples which points out that vertical mixing in Boston Harbor is considerable. In general violations in the inner harbor occurred in areas near CSO's such as the semi-enclosed Fort Point Channel (MWRA, 1993). Because there are no CSO's within the immediate vicinity of the dredging areas, and because the flushing rates and the considerable vertical mixing are high, the project should not significantly change dissolved oxygen levels in the harbor.

ISSUE 9: Use of an independent observer

EOEA: Pg. 4, para 2
The Corps and Massport are currently working with EOEA agencies on a scope of work for an independent observer.

ISSUE 10: implementation of a specific long-term monitoring program

NOAA : Pg. 4, para 9 ; EOEA: Pg. 3
It is anticipated that up to a year of monitoring will occur after completion of construction, as a project cost. The DAMOS program would provide some long-term monitoring of the in-channel disposal site. In addition, routine surveys will be conduced in areas requiring future maintenance for the BHNIP. These surveys when conducted in the area of cells will provide some cap data. Anticipated monitoring parameters could include cap integrity and benthic recolonization studies. The monitoring program will follow permit requirements.

ISSUE 11: use of Little Mystic Channel as a contingency site

NOAA: Pg. 2, para 3; USFWS: Pg. 3, paras 2 and 3
There are two other potential contingency options that would be implemented before the use of the Little Mystic Channel. These options include creating more in-channel cells outside the project limits and landfill. It may be possible to construct additional in-channel cells at the upper end of the 40-foot main ship channel adjacent to the Inner Confluence. Limited seismic reflection information prevents an estimate of cell depth so using adjacent cells as a guide it is tentatively estimated that six cells providing about 150,000 CY could be constructed.

Landfills, while significantly more expensive, would be an option that would not

require extensive environmental studies to accomplish. Landfills may be used if the amount of dredged material remaining is small. Also, in-channel disposal will be prioritized to accommodate Federal channel material first, then beneficiaries, and then non-beneficiary berths. The non-beneficiary berths may be required to use another option if in-channel disposal capacity is not available.

There is one CSO (BOS019) located within the Little Mystic Channel. It discharges from the southern bulkhead at the Chelsea St. Bridge. MWRA has no plans to decommission this CSO. Use of the Little Mystic channel for disposal of dredged materials would not prevent the use of this CSO for two reasons. First, a bulkhead constructed to contain the disposal area would be placed inshore (west) of the bridge, allowing the CSO to continue to discharge directly into the mouth of the Little Mystic channel. Second, the final depth of the site, once the disposed dredged material has been capped, would be 3 feet below mean low water (MLW), maintaining the subtidal nature of the site.

Little Mystic Channel would provide approximately 300,000 cy of space if needed. Material disposed in the Little Mystic Channel would be capped with clean material, thereby isolating the contaminated material now available for biological uptake. This alternative would maintain this area as subtidal habitat (-3 feet mlw), including a cap. Benthic, finfish and lobster studies have been performed at the Little Mystic Channel disposal site. No loss of functions and values of this site is anticipated.

USFWS is concerned that because of past fill operations in Boston Harbor the use of Little Mystic Channel could add to further degradation of the harbor. All of the in-channel cell capacity, additional cells in the upper main ship channel, and/or landfill sites would be used before Little Mystic Channel. It is recognized that additional studies, including reassessing alternative disposal plans, would be needed before Little Mystic Channel could be considered as a contingency site.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
22 Bridge Street, Unit #1
Concord, New Hampshire 03301-4986

May 10, 1996

Mr. Joseph L. Ignazio
Director of Planning
Department of the Army
New England Division, Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149

Dear Mr. Ignazio:

This responds to your May 2, 1996 letter concerning the Boston Harbor Navigation Improvement Project, Boston, Massachusetts.

We have reviewed the New England Division responses to selected comments made by the Fish and Wildlife Service on the final environmental statement (EIS/EIR) for this project. The Corps Headquarters Office has requested further coordination between the agencies to insure that any outstanding issues are or can be resolved such that the project could move forward.

In our view, the responses to issues #8 and #11 on the issue paper attached to your letter are satisfactory and there is a reasonable likelihood that any concerns would be resolved during any subsequent permit process.

The NED response to issue #7 should be modified by incorporating a statement indicating that the Corps, EOEA, FWS and other agencies, if interested, would develop a mutually agreeable water quality monitoring plan during the 401 certification/CZM consistency process. If such a commitment is made by the Corps, then the Service would stipulate that the response was satisfactory and a reasonable likelihood exists that any concerns would be resolved during any future permitting process.

Any questions concerning this response should be directed to Mr. Vern Lang of this office at 603-225-1411.

Sincerely,

Kenneth C. Carr
Acting Supervisor
New England Field Office

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930

MAY 13 1996

Joseph L. Ignazio
Director of Planning
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149

Dear Mr. Ignazio:

The National Marine Fisheries Service (NMFS) has reviewed your May 2, 1996 letter transmitting the Corps' responses to resource agency comments on the Boston Harbor Navigation Improvement Project Final Environmental Impact Report/Statement (FEIR/S). We appreciate the opportunity to meet with your staff last month to discuss our comments and the Corps' preliminary responses, as well as the chance to review the Corps' final responses to be sure they address our agency's concerns. In our opinion, this type of coordination is extremely important to be sure that outstanding issues are not neglected as the Corps proceeds with final review and approvals for the project.

The Corps' responses to the National Oceanic and Atmospheric Administration's (NOAA) comments on the FEIR/S adequately address the majority of NOAA/NMFS' concerns, and we believe that the remaining issues can be resolved in a manner acceptable to NOAA, the Corps, and Massport during the state and federal permitting process for this project. However, we continue to recommend that the Corps make a stronger effort to coordinate this project internally between the Planning Directorate and the Regulatory Division. In particular, issues such as a fish monitor during construction (Issues #1 and #5) and the implementation of a monitoring program for the caps over in-channel disposal cells (Issue #10) could be handled in part through Section 10/404 permit conditions for the non-federal portion of the project. NMFS has raised this point repeatedly, but it is not clear whether project managers for the federal project have discussed such permitting options with Corps regulatory staff. Similarly, the proposed use of Little Mystic Channel as a contingency disposal site (Issue #11) would need to be evaluated through the permit process to identify less environmentally damaging practicable alternatives.

We look forward to continued coordination with the Corps on this project. If you have any questions about these comments, please contact Jonathan Kurland at (508) 281-9204.

Sincerely,

Chris Mantzaris
Chief, Habitat and Protected
Resources Division

cc: Karen Adams - ACOE
Vern Lang - USFWS
Phil Colarusso - EPA
Deerin Babb-Brott - MA CZM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
JOHN F. KENNEDY FEDERAL BUILDING
BOSTON, MASSACHUSETTS 02203-0001

May 21, 1996

Joseph L. Ignazio
Director of Planning
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149

Dear Mr. Ignazio,

This letter is in response to your May 2, 1996 letter concerning the Boston Harbor Navigation Improvement Project. EPA appreciates the opportunity to meet with your staff and discuss the issues raised by the federal resource agencies. As this is a complex project with many new regulatory issues, it is essential that this level of coordination continue between the agencies.

The majority of the issues have been resolved and EPA anticipates that the remaining issues will be adequately addressed through the permitting process. The remaining issues include the precise duties and skills of the on-board inspectors, the scope of the monitoring plan and the use of Little Mystic Channel as a contingency disposal site. The specifics of the monitoring plan and duties of the inspectors will be included as permit conditions. The use of Little Mystic Channel as a disposal site for dredge material would require the collection of additional information to demonstrate that this area is the least environmentally damaging practicable alternative.

EPA looks forward to continued coordination work with the Army Corps. Please contact Phil Colarusso of my staff at (617) 565-3533 with any questions about this project.

Sincerely,

David Fierra

David A. Fierra, Director
Office of Ecosystem Protection

The Commonwealth of Massachusetts
Executive Office of Environmental Affairs
100 Cambridge Street, Boston, 02202

WILLIAM F. WELD
GOVERNOR
ARGEO PAUL CELLUCCI
LIEUTENANT GOVERNOR
TRUDY COXE
SECRETARY

Tel: (617) 727-9800
Fax: (617) 727-2754

April 29, 1996

Mr. Joseph Ignazio, Director of Planning
USACE/NED
424 Trapelo Road
Waltham, MA 02254-9149

RE: Boston Harbor Navigation Improvement Project (BHNIP)

Dear Mr. Ignazio:

The Executive Office of Environmental Affairs (EOEA) has reviewed the BHNIP materials provided in response to the April 11, 1996 meeting with Mr. Peter Jackson. The information has been provided to EOEA for the purpose of determining that there is a reasonable likelihood that our remaining concerns will be resolved in a manner acceptable to EOEA, Massport and the Corps of Engineers during the permitting process.

Based on a review of the information by the Department of Environmental Protection, the Division of Marine Fisheries, and Coastal Zone Management, EOEA has determined that there are no outstanding issues which cannot be resolved during the permitting process.

Please contact me if there is any other information you require.

Cordially,

Trudy Coxe

cc: Robert Gollege, Acting Director,
DEP Division of Wetlands and Waterways
Margaret M. Brady, Director MCZM
Leigh Bridges, Asst. Director,
Division of Marine Fisheries
Janeen Hansen, Project Manager
Massport
Peter Jackson, Project Manager,
USACE-NED

C. Biological Opinion

UNITED STATES D ARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
One Blackburn Drive
Gloucester, MA 01930

JAN 22 1996

Joseph L. Ignazio, Chief
Planning Division
US Army Corps of Engineers (COE)
424 Trapelo Road
Waltham, MA 02254-9149

Dear Mr. Ignazio:

This is in reference to your letter and Biological Assessment for the Boston Harbor Navigation Improvement Project (BHNIP), which initiated consultation under Section 7 of the Endangered Species Act (ESA). The NMFS concurs with your determination that the BHNIP will not be likely to adversely affect endangered and threatened species under NMFS jurisdiction or impact their critical habitat provided that certain conditions are implemented, as discussed in the Biological Assessment and previous Biological Opinions for the Massachusetts Bay Disposal Site (MBDS-NMFS, 1991a) and the Central Artery/Third Harbor Tunnel Project (CA/THT-NMFS, 1991b).

NMFS' initial concerns for marine resources centered on the uncertainty of disposing of contaminated silty material from the dredging project, the uncertainty of the efficacy of using caps at the MBDS to contain these contaminants, and the cumulative impacts of this project in conjunction with material from the CA/THT project. In addition, concerns were raised over the increase in barge/vessel traffic to and from the disposal site compared to normal annual levels and the possible increase in general vessel traffic into the harbor when the project was complete.

Since project plans have changed and only clean parent material will be disposed of at the MBDS, the concerns over contamination problems at the MBDS are no longer an issue for this project. The contaminated material will be disposed in-channel within the harbor and covered over with a clean sand cap. Endangered and threatened sea turtles and whales are not found in the channel or adjacent areas and the overlying layer of clean sand should be sufficient to contain any contaminated material buried below.

However, it is important to control the dredging process to maintain the integrity of separation of clean parent material from the contaminated silts. In our letter of August 29, 1995, we identified the concern that residual contaminated silt will be mixed with the parent clay material during the dredging process and be dumped at the MBDS. We continue to recommend that the COE attempt to quantify what fraction of the dredged

parent material (on a barge load basis) would be tainted by residual contaminated silt and inform us of the results before the actual dumping begins in 1997.

Other than water quality issues related to contamination, vessel traffic is the main concern for endangered and threatened whales that transit the MBDS. Hard-shelled sea turtles are extremely rare in the vicinity of MBDS and are not likely to be impacted by this project. Leatherback sea turtles are present, and while vessel collisions are remotely possible, it is highly unlikely that 8 barge loads a day at speeds less than 5 knots will adversely affect this species. There are two possible impacts, however, regarding vessel traffic and whales: 1) the short term impact of an increased number of disposal vessels traveling to and from the disposal site, and 2) increased use of the harbor (i.e. increase in number of large ships) .

While the MBDS is not a high use area, many individuals of endangered right whale, humpback and fin whale populations transit the area. Right whales, in particular, are extremely susceptible to vessel collision due to their propensity to rest, skim feed, and mate on the surface. Twenty percent of all right whale mortalities observed between 1970 and 1989 were caused by vessel collisions. Seven percent of the population exhibit prop wound scars indicating additional, non-lethal vessel interactions. It has been estimated that 19% of all vessel/right whale interactions are lethal (Kraus, 1990). An additional 5 known ship strikes causing three injuries and two mortalities have occurred since the aforementioned report. It is particularly important that vigilant observation be maintained aboard vessels during the period when right whales are most abundant in Cape Cod Bay, from the end of March though May. Other species of large whales also show scars indicating vessel interactions. Six of 18 humpback whales stranded in North Carolina and Virginia in recent years were identified as having been killed by vessel strikes (Wiley, 1995). Observers in the southeast have reported that whales have been known to closely approach dredging vessels.

Cooperation of vessel operators with trained endangered species observers greatly reduces the chance of whale/vessel interactions. Requiring the presence of trained observers in conjunction with the slow operating speeds of these disposal vessels (5 knots or less), allow us to conclude that the dredge and disposal operations associated with this project are not likely to adversely affect endangered whales. Right whales can travel at burst speeds of five-six knots, and humpback whales can easily avoid these slow moving vessels. Both the CA/THT and the MBDS consultations recommended that conservation measures be implemented that require NMFS-approved observers and special operating procedures when whales are in the vicinity of the operation. With the addition of further disposal operations from the BHNIP, this recommendation is even more vital to reducing the potential for impacts to these species and is part of the basis for our "not likely to adversely affect" determination. Since disposal for this project will be at the MBDS, all permits issued by the COE should include all five of the conservation recommendations

listed in the MBDS consultation. Finally, your assessments have estimated that 8 barges per day will be traveling to and from the MBDS from both the BHNIP and CA/THT projects combined in 1997-1998. Should this estimate change, NMFS should be contacted to evaluate whether consultation should be reinitiated.

The other concern regarding vessel interactions is the possibility of increases in number of vessels coming to the Port of Boston because of the increased navigability this project will provide. Part of the conclusion of this consultation is based on your assertion that the number of vessels coming in and out of Boston Harbor should not increase, and may actually decrease, as a result of deepening the navigational channels. COE should carefully monitor this factor. Should new information become available that changes the basis for this conclusion (an increase in number of crossings are observed), or the basis for any other decision in this consultation, then consultation should be reinitiated.

Acoustic disturbance is one of the more elusive impacts possible from vessels and dredging operations such as BHNIP. Background noise in the ocean comes from many sources, but vessels are the major contributors (Richardson et al., 1995) . Marine dredging also creates underwater sound and can exceed ambient levels of sound out to considerable distances. Many reactions of marine mammals in the vicinity of vessels are presumed to be reactions to noise. However, very few controlled tests have been conducted that compare the reaction to that in the absence of vessels. Reactions are seen at long distances and follow changes in propeller speed. However, this dredging and disposal activity will result in 8 barge loads a day for 1997-1998, and thus will not be a continuous activity; this project will, therefore, have little influence on the level of background noise in Massachusetts Bay. Since the level of vessel traffic into and out of the Harbor is not expected to increase, noise levels should not increase. No information is currently available providing evidence that this disturbance is adversely affecting marine mammals or sea turtles in Massachusetts Bay. Since the most often observed reaction appears to be avoidance and the project is not in a high use area for whales, it is unlikely to have any adverse impact.

Finally, although not a part of the Section 7 consultation, we recommend that you address the issues raised in NMFS' August 29, 1995 comments on the FEIS before proceeding with the federal navigation project and prior to issuing a permit to Massport for the non-federal portions of the BHNIP. These issues include fish sampling at the in-channel disposal sites, contingency plans for disposal of material that cannot be contained in-channel, use of a qualified observer to monitor the project, and use of available technologies to reduce turbidity during in-channel operations. Attached are the conservation recommendations from the CA/THT and MBDS consultations for your reference and convenience.

If you have any further questions regarding this project, please contact Laurie Silva at (508) 281-9291 or Jon Kurland at (508) 281-9204.

Sincerely,

Dr. Andrew A. Rosenberg
Regional Director

Attachments

cc: F/PR - Bellmer, Payne
Mantzaris
K. Demos (COE)

Literature Cited

NMFS, 1991(a) Biological Opinion for the Massachusetts Bay Disposal Site: Final Designation for Ocean Disposal. Northeast Region.

NMFS, 1991(b). Biological Opinion for the Central Artery Third Harbor Tunnel Project: Dredged Material disposal at the Massachusetts Bay Disposal Site. Northeast Region.

Richardson, W.J., C.R. Greene, C.I. Malma, and D.H. Thomson. 1995. Marine Mammals and Noise. Academic Press Inc. 576 pp.

Kraus, S.D. 1990. Rates and potential causes of mortality in North Atlantic right whales (*Eubalaena glacialis*). Marine Mammal Science. 6(4):278-291.

Wiley, D.N., R.A. Asmutis, T.D. Pitchford, D.P. Gannon. 1995. Stranding and mortality of humpback whales, *Megaptera novaeangliae*, in the mid-Atlantic and southeast United States, 1985-1992.

CONSERVATION RECOMMENDATIONS

In addition to Section 7(a)2, which requires agencies to ensure that proposed projects will not jeopardize the continued existence of listed species, Section 7(a)1 of the ESA places an additional responsibility on all Federal agencies to: "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species...". NMFS is developing recovery plans for sea turtles and final plans for the northern right whale and humpback whale are being reviewed. These plans describe actions deemed necessary to achieve recovery and include implementation schedules that identify the Federal agencies best suited to address each recovery action. NMFS will advise and coordinate efforts toward achieving the goals of each plan. Copies of the northern right whale and humpback whale recovery plans will be forwarded to you by the Northeast Regional Office when they are available.

NMFS recommends that the following conservation measures be implemented to reduce adverse impacts to listed species.

(1) Disposal activities associated with the CA/THT may result in harassment, vessel collisions and exposure of endangered and threatened species to falling sediments (with small levels of contamination) and rock. In addition, sediments may impact some phytoplankton, zooplankton and fish species that are utilized by endangered species.

To minimize these risks, NMFS-approved observers should be on board disposal vessels during all disposal operations to identify and report the presence of listed species in the vicinity of the MBDS. Disposal vessels should not intentionally approach listed species closer than 100 feet when in transit. When species are present in the MBDS, vessels should, except when precluded by safety considerations, follow the advice of the on-board NMFS-approved observer to avoid direct impacts to individuals when releasing sediments at the disposal point. The on-board NMFS-approved observer should utilize the following guidelines to determine if disposal should be allowed in the presence of listed species. If listed species are sighted between a distance equal to twice the disposal vessel length and the disposal point, then release of sediments or rocks should be delayed until the animals move away from the disposal point. An alternative disposal buoy may be used, if available, when animals do not leave the primary disposal point. If visibility precludes the ability to sight listed species within a distance equal to twice the disposal vessel length, activities should be suspended until they improve. If listed species are sighted between a distance equal to twice the disposal vessel length and 1500 feet of the disposal point, the on-board NMFS-approved observer will note the animals's relative position, direction and speed of swimming, and behaviors

such as feeding or logging of whales to determine if release of sediments or rock is likely to harass or endanger the animals. For example, whales actively feeding at or near the disposal point are more likely to interact with the water column and thus released sediments than resting whales. If listed species are sighted at or beyond 1500 feet (1/4 nautical mile) of the disposal point, release of sediments or rock may proceed.

NMFS is currently reviewing regulations for the intentional approach of marine mammals. Should these regulations be implemented with stricter approach distances than Northeast Regional guidelines, these conservation recommendations will be modified accordingly.

(2) Corps personnel in charge of disposal monitoring should be in contact with NER Protected Species Staff regarding endangered species distributions and abundances in the region during disposal operations.

(3) Compliance with MARPOL V and the Marine Protection, Research and Sanctuaries Act of 1972, as amended, will reduce the effects of marine debris to listed species. Therefore, all project vessels over 26 feet in length should be displaying a MARPOL V sticker. All vessels over 40 feet must document their waste management plan to NMFS.

(4) Information is needed to sufficiently evaluate the additive, long-term impacts of disposal operations to the water quality of the MBDS and the Massachusetts Bay in general. The Corps should, in cooperation with the EPA, NMFS and the Commonwealth of Massachusetts conduct studies to adequately characterize the ambient levels of heavy metals and organics inside the boundaries of the MBDS and throughout Massachusetts Bay.

(5) Weather conditions may preclude the safe dumping of materials at the marker buoy. To ensure that disposal effects will be confined to the MBDS, on-board Corps inspectors should be given weather guidelines for exercising authority to suspend disposal operations before leaving port.

(6) Monitoring efforts should be implemented to verify the predictions of the ADDAMS DUMP model and ensure that disposal material remains contained within the MBDS circular boundary. Highest priority should be given to worst case conditions. Such data would establish confidence in the model's use for the MBDS.

(7) All agencies involved in activities that either contribute to the existing, or may add to the contaminant load in the Massachusetts Bay and Cape Cod Bay system, should be involved in a long-term testing program to monitor accumulated levels of key contaminants in free ranging endangered species. Historic tissue samples should also be tested when available to determine background levels of these chemicals.

CONSERVATION RECOMMENDATIONS

In addition to Section 7(a)(2), which requires agencies to ensure that proposed projects will not jeopardize the continued existence of listed species, Section 7(a)(1) of the ESA places an additional responsibility on all Federal agencies to: "utilize their authorities in furtherance of the purposes of this Act by carrying out programs for the conservation of endangered species....." NMFS is developing recovery plans for sea turtles, and final plans for the northern right whale and humpback whale are being reviewed. These plans describe actions deemed necessary to achieve recovery, and include implementation schedules that identify the Federal agencies best suited to address each recovery action. NMFS will advise and coordinate efforts toward achieving the goals of each plan. Copies of the northern right whale and humpback whale recovery plans will be forwarded to you by the Northeast Regional Office when they are available.

NMFS recommends that the following conservation measures be implemented to reduce adverse impacts to listed species. Similar measures were issued in the August 7, 1991, Biological Opinion to the Corps and Federal Highway Administration for the Central Artery/Third Harbor Tunnel Project. NMFS considers these recommendations applicable to all disposal projects that may be conducted at the MBDS. Thus, EPA should use its review authority to ensure that all permits issued by the Corps include conservation recommendations one through five. Additionally, a cooperative effort between EPA, the Corps, NMFS, Commonwealth of Massachusetts and all other agencies involved with potential environmental degradation of the MBDS is required to accomplish conservation recommendations six and seven. EPA should be the lead agency for these long-term studies.

(1) Disposal activities associated with the MBDS may result in harassment, vessel collisions and exposure of endangered and threatened species to falling sediments (with small levels of contamination) and rock. In addition, sediments may affect some phytoplankton, zooplankton and fish species that are utilized by endangered species.

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NMFS is currently reviewing regulations for the intentional approach of marine mammals. Should these regulations be implemented with stricter approach distances than Northeast Regional guidelines, these conservation recommendations will be modified accordingly.

(2) EPA and Corps personnel in charge of disposal monitoring should be in contact with NER Protected Species Staff regarding endangered species distributions and abundances in the region during disposal operations.

(3) Compliance with MARPOL V and the Marine Protection, Research and Sanctuaries Act of 1972, as amended, will reduce the effects of marine debris to listed species. Therefore, all project vessels over 26 feet in length should be displaying a MARPOL V sticker. All vessels over 40 feet in length must document their waste management plan to NMFS.

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(5) Weather conditions may preclude the safe dumping of materials at the marker buoy. To ensure that disposal effects will be confined to the MBDS, onboard Corps inspectors should be given weather guidelines for exercising authority to suspend disposal operations before leaving port.

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(7) All agencies involved in activities that either contribute to the existing, or may add to the contaminant load in the Massachusetts Bay and Cape Cod Bay system, should be involved in a long-term testing program to monitor accumulated levels of key contaminants in free-ranging endangered species. Historic tissue samples should also be tested when available to determine background levels of these chemicals.

INCIDENTAL TAKE

Section 7(b)(4) of the ESA requires that when an agency action is found to comply with Section 7(a)(2), NMFS will issue a statement specifying the impact of incidental taking of endangered species, providing reasonable and prudent measures necessary to minimize impacts, and setting forth the terms and conditions that must be followed.

The action of final designation of the MBDS should not result in the direct take of any endangered or threatened species under NMFS jurisdiction. Furthermore, all disposal at the MBDS will involve additional Federal action by the Corps or other action agencies. Section 7 consultation regarding these actions will provide incidental take statements for the scope of each project. Accordingly, an incidental take statement is not being issued for this Biological Opinion.

D. Stellwagen Bank Marine Sanctuary Consultation Letter

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OCEAN AND COASTAL RESOURCE MANAGEMENT
SANCTUARIES AND RESERVES DIVISION
Stellwagen Bank National Marine Sanctuary
14 Union Street
Plymouth, Massachusetts 02360
(508) 747-1691 (508) 747-1949 FAX

23 February, 1996

Joseph L. Ignazio, Director of Planning
Planning Directorate
New England Division
U.S. Army Corps of Engineers
424 Trapelo Road
Waltham, Massachusetts 02254-9149

Dear ~~Mr. Ignazio~~ Joe:

In response to your letter dated 11 January, 1996, I want to confirm that you have completed the formal consultation process, as provided for in the National Marine Sanctuaries Act, with our office. If this project is modified in a manner that would change the way in which the Sanctuary may be affected by the action, please contact my office to re-open the consultation.

I would be happy to meet with your staff to answer any questions they might have regarding the consultation process. Please have Ms. Demos give me a call to arrange a date and time.

Sincerely,

Bradley W. Barr
Sanctuary Manager